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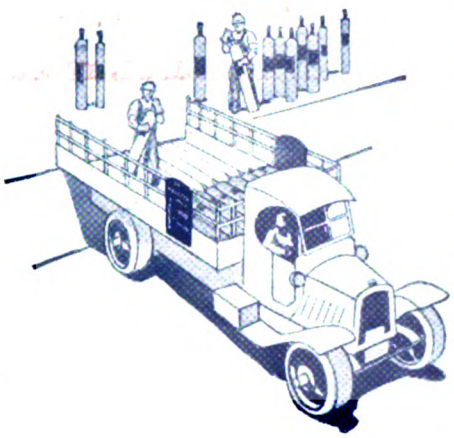

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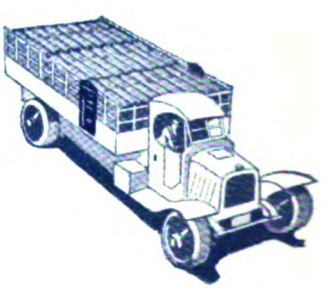

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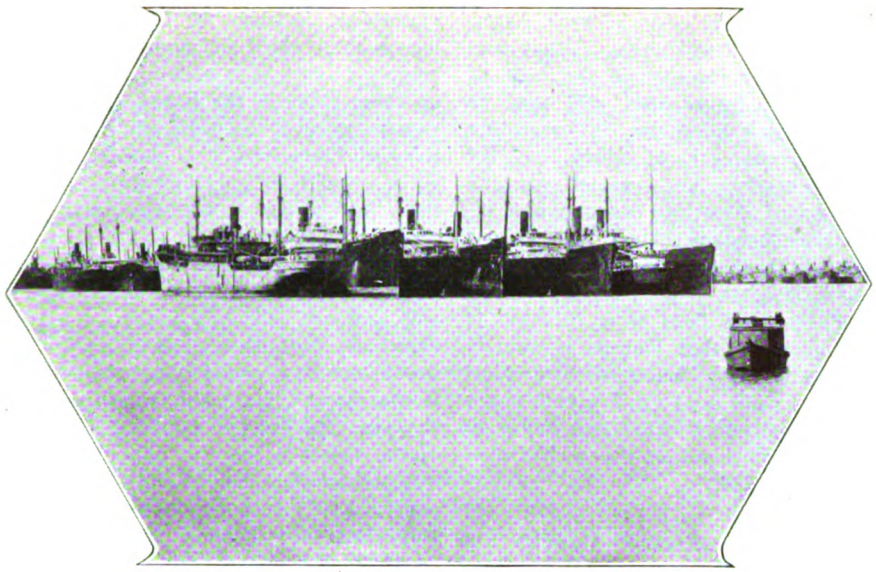


MONEY IS WASTED IN MAINTAINING IDLE SHIPS

Many inefficient and outclassed vessels are kept swinging at anchor while the cost of supervision goes on day after day. This loss could be checked by selling the ships for scrap or to any buyers, domestic or foreign. Why not auction off 10 this month, another 10 next month, and keep it up until this indefensible waste is stopped?

Marine Review

October 1924

Should Abolish Shipping Board

VIGOROUS demand for freeing the marine industry from the destructive influence of government competition, is gaining strength. More ship owners and operators, as well as builders now feel that the complete removal of the government and of government ships, would be the greatest single help American shipping could receive.

Continued government operation of ships for a few months or years longer means with almost absolute certainty, the perpetuation of this socialistic experiment. It is contrary to every American principle. The defense of its advocates is that without the present direct help of the government operated vessels, no American ships could compete in foreign trade and the good results of building foreign trade in the past few years would be wiped out.

One large shipowner who has been working vigorously in the past few months to end this intrusion of socialism into the shipping business, is C. W. Cook, president of the American Hawaiian Steamship Co. He believes that continued government operation spells the end of America's private shipping. Elimination of the government ships now, might end temporarily a few advantages we now hold, but would save private shipping. A private vessel and a government vessel can not operate side by side. In the end, the ship supported by the public treasury will drive away the vessel which must fight for commercial existence.

In his campaign, Mr. Cook has gradually enlisted converts. He won some support from fellow members of the Pacific American Steamship association, to his resolution urging elimination of the shipping board, repeal of the marine acts of 1916 and 1920, and liquidation of the government fleet. In the past few weeks, he has extended his efforts to the Atlantic, coming east for personal interviews with Atlantic owners.

MARINE REVIEW presents in the following pages, a complete record of the views of Mr. Cook. They are important because they reflect the reasoned judgment of a successful shipowner. They are interesting because they put plainly some opinions which many have held but hesitated to utter publicly. They are vital because they deal with the future of American shipping.

Shipowner Wants Ship Board to Quit

NATIONAL sentiment interferes with logical thinking based on cold facts. As the saying goes, "the wish becomes father to the thought." Are we in this situation today in regard to the continued efforts to create an American merchant marine in the foreign trade, by the experiment of government ownership and operation?

This article analyzes the shipping situation in this country today. The opinions largely reflect those held by Mr. Cook as gained in an interview given to a Marine Review representative.

A national merchant marine, unlike the army, navy, coast guard, geodetic survey and other purely government activities, is a business and must be based on, and conform to economic laws, to be successful. Therefore, a fair analysis of the true situation, guided by reason and facts, even though it leads to the recommendation to discontinue the pres-

ent money losing plan of government ownership and operation of ships in foreign freight services and to retire the government at once and permanently from the shipping business, should be welcomed by all. This would not be a destructive move but rather a constructive attempt to solve this difficult problem and to place the American merchant marine solidly on its own feet to fight out its own salvation. The government can support and encourage the growth of a merchant marine by good laws and intelligent co-operation, but no government can make a merchant marine by pouring out money, and then place it carefully in private hands as a ready made, finished and highly successful going business, any more than it can hope to grow oranges around the North Pole.

Have Large Private Fleet

We have and we intend to keep to ourselves a large growing and prosperous merchant marine engaged in domestic trade along our coasts, between our eastern and western seaboards and to our outlying possessions. The government can regulate and control such trade because both the ports of sailing and call are within its own territory. Large American fleets are engaged in the foreign trade carrying the raw materials or the finished products of powerful industries that have control of such shipments both ways, through their holdings in the lands where the sources of supply exist and through powerful financial connections in the lands of their customers. Specialized fleets of this sort exist for instance in the following large industries, steel, oil, sugar and molasses, fruit, lumber, and sulphur. These fleets will continue to grow and flourish under private ownership.

As common carriers in the foreign trade where a ship runs in a regular service between American and foreign ports, the American government can not control and regulate or dictate terms and conditions any more than a foreign government can do so in our ports. Accordingly, such business must be conducted purely on a competitive basis. In trade with the world, the country can not sell its products and buy theirs and at the same time insist on delivery both ways in American bottoms. Furthermore, the exceptionally fine domestic economic conditions of this country retard either labor or capital being attracted to foreign going shipping, as the returns are more uncertain and at the best much less than for the same effort and risks in enterprises ashore.

With a large and efficient foreign merchant marine eagerly bidding for this trade, the freight rates established are of course based on foreign operating costs. A very substantial differential exists in operating costs between American and all foreign ships. What conditions can be foreseen in the near or even distant future that will tend to remove this difference in operating costs? Mechanical efficiency in the ships themselves and greater working efficiency of American seamen and officers have been mentioned as the lines along which this leveling of operating costs must come. But what opportunity lies along these lines when it is quite freely admitted that Europe is already ahead in the application of economical power for ships, and the life and wages afloat do not draw American youth to the sea in such numbers that picked men can be obtained.

For six years, the United States government, having acquired through the exigencies of war a large merchant fleet, has been attempting to operate ships, or have them operated under agency agreements, in the face of continued losses. These losses have been made good by money appropriated by congress and the shipping board fleet continues in operation. Of course, the mandate of congress is clear that the fleet is to be sold as quickly as possible to American citizens under proper guarantees to continue operation under the American flag. But in the mean time lacking proper customers for the fleet, the shipping board is to continue to operate its ships on all essential trade routes. Hopeful advocates of American ships in the foreign trade feel that the losses incurred now will not continue and that if the government keeps on, the time will come when the ships can be sold to private operators and a profit made upon their operation. It is very difficult to understand what basis exists for such a hopeful outlook. Six years have not sufficed to show an improvement. and the future offers no apparent change to alter in any way the relative advantage of foreign ships over American ships in the foreign trade.

A Game of Politics

Continued government operation and regulation does not aid private operators but on the other hand tends to deaden initiative and to kill enterprise. For instance, a good deal has been said about placing the Philippines in the coastwise category, that is, to limit the trade between the United States and these islands to American ships. For reasons presumably of sufficient weight, two Presidents have refused to issue the necessary executive order to place this recommendation of congress in effect. In the meantime, under political pressure it is believed, the shipping board has ordered private operators of government owned vessels trading between the west coast of the United States and the Philippines to discharge all Filipinos working on these ships and under no circumstances to hire any such for any duties on these ships in the future. This is a strange move if the good will of the natives of these islands is deemed worth while, should the step be taken to place the Philippines under the coastwise rules.

Under authority vested in the shipping board, the owner of an American ship can not sell such a ship to a foreign buyer without first certifying to the board that the vessel about to be sold is worthless. Naturally such certification does not tend to enhance the value of the vessel in the eyes of the prospective purchaser and he drives his bargain accordingly. As a result, the American shipowner not desiring to make such certification continues operating the vessel when as a matter of fact he might like to make the best sale possible and then build a new ship to take its place.

Remove the Board

In order to stop the continued waste of the peoples' money and to remove restrictions and regulations inimical to private ownership and operation of merchant shipping, the merchant marine acts of 1916 and 1920 should be amended, discontinuing the shipping board and all its authority over private shipping. All provisions of these acts which are of benefit to the merchant marine should be kept in force and where necessary amplified and added to with any new provision that would be helpful.

The proper regulatory powers over American shipping now vested in the shipping board should be given over to a bureau of merchant shipping in the department of commerce and headed by an assistant secretary of commerce. This bureau also should have charge of all the present activities of the department in connection with shipping.

All government operation and private operation of government vessels in freight services should be discontinued as soon as present contracts could be terminated.

Lay up all good freight vessels, and sell for whatever they would bring or scrap all clearly outclassed and inefficient vessels of the government fleet.

Continue all combined fast passenger and freight routes but make it clear to the present operators that the government is determined to sell these ships and services to them or to other American operators at the earliest possible time, on the best terms obtainable, setting a reasonable time limit in which such liquidation is to take place and in lieu of failure to so liquidate, hold a public auction to sell the ships and services to the highest American bidders.

A mail subvention sufficient to meet the differential between American and foreign operating costs should be awarded to the private owners and operators of these lines after they have taken them over.

For seasonable heavy movements of freight, the best of the laid up tonnage could be placed in service on a straight charter basis.

The above is a brief outline of a definite program, which if adopted would put a stop to the losses now incurred in government operation and ownership. Advocates of government ownership and operation under present conditions claim that the losses sustained are much more than made good to the people as a whole through the resulting low freight rates. This is a fallacious argument as the free tonnage of the world is so great, not to mention the effect of the proposed laid up ships of the government, that competitive tonnage would be available on the shortest notice to carry cargoes at reasonable freights should any group feel that they had a monopoly and so begin to increase rates beyond a fair and equitable standard.

Ready for War Use

Much has been said with considerable force of reason that the war demonstrated the great need of a merchant fleet, first as an auxiliary to the navy and as transports and secondly to carry our goods and merchandise when the foreign ships were engaged elsewhere. The program proposed here would save and tend to augment that part of our merchant fleet particularly suitable for the first purpose. In case of war or imminence of war, foreign shipping in our harbors could be seized as it was during the last war and this tonnage in addition to the large growing fleets in specialized industries and ships in the domestic trade would be sufficient when supplemented with increased new building to tide over immediate demands. Besides the prospects of another great war in this generation or for a long time after seems very remote. Preparedness for war after all is relative, not absolute, and it is economically impracticable to keep a tremendous merchant fleet in immediate seagoing condition solely to supply the needs of such an emergency, much along the same line as it is considered impracticable to have a really large standing army in constant training or a sufficient supply of all the munitions of war all ready stored for immediate use.

American shipyards must be preserved and the specialized skill necessary both in the planning and building of ships must not be allowed to lapse through insufficient work to keep them in a healthy and vigorous condition. Supporters of the present governmental policy in regard to fostering and upbuilding an American merchant marine have claimed that by such a policy shipbuilding will benefit. It has not so benefited during the past few years, nor can shipbuilding hope to benefit as long as ships are being operated at a loss. On the other hand, the program advocated in this article will preserve and inject new vigor into those services which employ the larger, fast passenger ships. Replacements and additional ships of this type would call for the greatest amount of work and skill on the part of the shipyards.

Without in any way being paternalistic, the government as a matter of prudence and wisdom should foster shipbuilding by placing all government orders for ships of the navy and the army and all other government departments in private shipyards on competitive bids. Such a policy on the part of the government in conjunction with the above replacements and additions in the foreign trade and the considerable and growing demand for ships engaged in domestic commerce and for the fleets which are incidental though important to large specialized American industries, and the repairs to all these vessels, will form the surest foundation for the growth and progress of shipbuilding.

Generalities will not solve this question. Waving the flag and shouting patriotism will not do it. Economic laws alone, will control a business such as foreign shipping which must of necessity go to foreign ports and deal with foreigners as well as native shippers. An educated American personnel in foreign trade, efficient representation on the part of the consular service and wider influence and power of American finance in such trade and sensible, fair government laws in regard to all phases of maritime activity equal to those of the most successful seafaring nations, are a preliminary. Beginning with such foundations, American ships may in time overcome the differential in operating expense due to crews' wages and victualing and in capital cost of the ship and so be able to compete with foreign ships for this business. It is folly to attempt to upbuild the merchant marine on any other basis.

How to End Government Interference with Shipping Business

PRINCIPAL elements in the program urged by President C. W. Cook of the American-Hawaiian Steamship Co. for removing government interference with the marine business, are:

Discontinue the shipping board, giving purely regulatory powers over shipping to a bureau in the department of commerce.

All government operation and private operation of government ships to be discontinued.

Lay up good freight vessels; sell or scrap all inefficient ships.

Good laws and intelligent co-operation rather than attempting to build up a merchant marine by direct support of the federal treasury.

Amend merchant marine acts of 1916 and 1920.

Continue fast passenger and freight routes, but set time limit in which operators must prepare to buy over these routes and properties. If no operator is prepared at that time, auction off such ships to the highest bidder.

Mail subvention for such routes after sale to private owners.

In peak freight periods, charter laid up ships.

Government should place its new ships for the navy, army and other departments with private yards, on competitive bids.

Hold Dinner for New Pacific Manager

Leo E. Archer for some time passenger traffic manager of the White Star Line, and recently appointed manager of the International Mercantile Marine Co. on the Pacific coast, was tendered a farewell dinner by about 125 steamship men, railroad and tourist agents, on Sept. 16 in New York, shortly before leaving to take up his new duties in San Francisco. Speeches were made by Sir Harry Armstrong, British consul general in New York, Federick Toppin, first vice president, and F. W. Ridgway, manager of the steamship department of the company. Cornelius Vandestadt, general passenger manager of the Holland-America Line, acted as toastmaster.

Sets Record in Freight Service

Intercoastal Freighter, Turbine Driven, Shows Consistent Performance—Fuel Costs Taken from Log

MOST of the few new ships recently completed or building in the United States are steam driven and the more important of these are equipped with steam turbines and reduction gears. When the Southern Pacific Steamship Lines decided to build two large new ships for its fleet, one a fine passenger and freight vessel and the other a large fast freighter, steam turbines with reduction gears were chosen for the main drives. This was not an off-hand decision actuated by extreme conservatism or a desire to follow the lines of least resistance along a well beaten path.

Studies Ship Drives

A. S. Hebble, superintending engineer of the Southern Pacific Steamship Lines, has had for years the opportunity as well as the responsibility of recommending to the owners the characteristics of machinery and hull design most suitable for new vessels. Prior to deciding on the type of drive for the two new vessels now building, Mr. Hebble made a detailed study of the status of the oil engine for marine engine drive in the United States, visiting the plants of all the well known engine builders. This investigation was further supplemented by an extended visit to all the principal manufacturers of marine oil engine in Europe. At the conclusion of this open minded and thorough investigation, the steam turbine, reduction gear drive was chosen for each of the two new ships. It is only fair in this connection to say that conditions peculiar to the Southern Pacific Co. as regards obtaining certain grades of fuel oil suitable for burning under boilers, no doubt had some weight in the decision made.

TABLE I

Engine Room Crew

Steamer J. L. LUCKENBACH
Crew Complement—Engine Room
1—Chief Engineer
1—First Assistant Engineer
1—Second Assistant Engineer
1—Third Assistant Engineer
1—Fourth Assistant Engineer
Three oilers
Three Water Tenders
Three Wipers
Three Firemen
1—Deck Engineer
1—Storekeeper
Total 19 men in Engine Room.

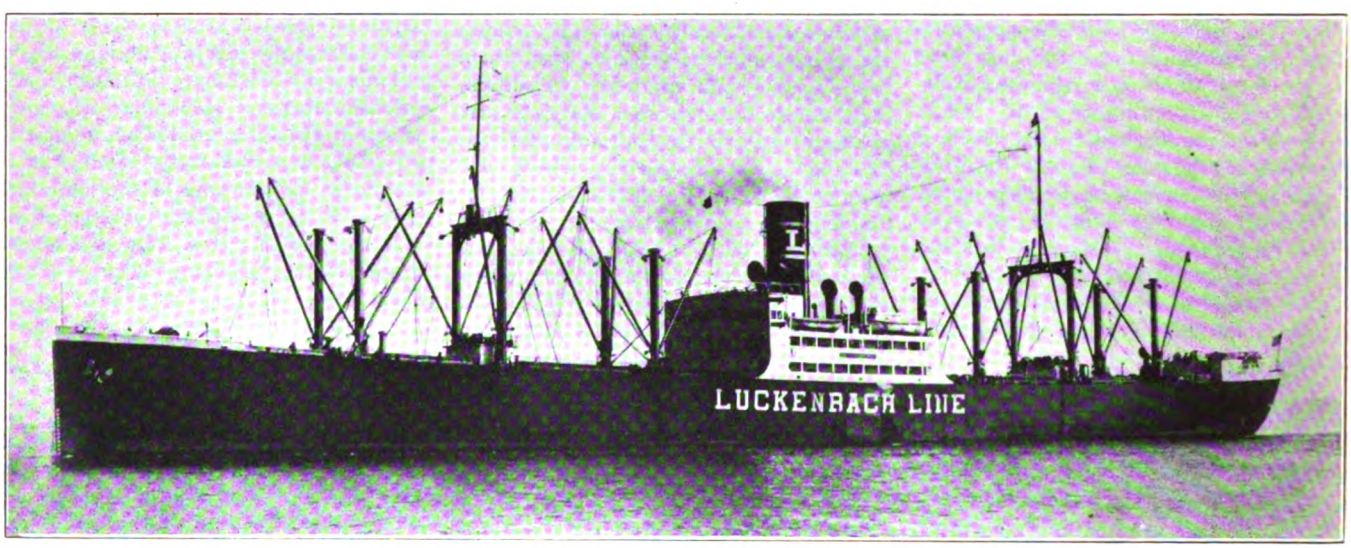
Other vessels recently completed or now building, among which are the BOSTON and NEW YORK of the Eastern Steamship Co. the ROBERT E. LEE and GEORGE WASHINGTON for the Old Dominion Steamship Co. and the CHEROKEE and SEMINOLE of the Clyde Steamship Lines and the new passenger and freight steamer for the New York & Porto Rico Line, are all equipped or to be equipped with steam turbines and reduction gears.

It is of course generally understood that the service for which a vessel is intended, definitely affecting its hull design, will also be an important factor in the choice of power. Where the size, type and service of vessel leaves the choice of power an open question, elements of fuel efficiency, weight, space occupied, reliability, maneuvering qualities and the important matter of initial cost, will determine the selection.

Record of Sea Service

Information of a practical nature showing the performance of a carefully operated, large twin screw, steam turbine reduction gear freighter should be of interest. Such data will be useful in formulating opinions as to the most economical main drive in a vessel of this type and service. Consequently, the recent actual performance record of such a freighter over a period of 10 months is given in this article.

The J. L. LUCKENBACH shown in the accompanying illustration, was laid down at the yard of the Sun Shipbuilding Co. during 1918 as a part of the building program of the Luckenbach Steamship Lines. The contract was, of course, taken over by the government and the vessel was completed as a troop transport in 1919. After a period of government service, she was laid up, and in 1922 was taken over by the owner and rebuilt to conform to original plans by the Baltimore Dry Dock Co. and completed in February, 1923. In March, 1923, this vessel was placed in the inter-coastal service of the Luckenbach Lines operating between Boston, Philadelphia and New York and Los An-



TURBINE DRIVEN STEAMER J. L. LUCKENBACH WHICH HAS BEEN SETTING A RECORD FOR CONSISTENT PERFORMANCE IN THE INTERCOASTAL TRADE

TABLE II

Dimensions and Equipment of Turbine Driven Freighter

Hull Particulars

J. L. LUCKENBACH, twin screw steel freighter.
Built at Sun Shipbuilding Co., Chester, Pa., in 1919.
Rebuilt at Baltimore Dry Docks Plant, Bethlehem Shipbuilding Co. in 1923.

Length over all, ft., ins	473	7
Length bet. perps., ft., ins	449	0½
Beam molded, ft., ins	60	0
Depth molded, ft., ins	40	11
Load draft, ft., ins	31	1
Displacement in salt water at load draft, tons		17,719
Deadweight at load draft, tons		11,980
Mean light load line, ft., ins	11	6½
U. S. gross tonnage		8,536
U. S. net tonnage		5,374

Classification—Highest in both Lloyds and American Bureau of Shipping.

Cargo Capacities

Grain, cu. ft	625,988
Bale, cu. ft	592,211
Reserve feed water, tons	393

Fuel Oil Capacity

In barrels	15,606
In tons at 6.7 barrels, per ton	2,329
Speed, knots	14

Main Machinery

Two—De Laval—cross compound—single reduction—impulse type—surface condensing-steam turbines of 2250 shaft horsepower each at 2200 revolutions per minute.
Two propeller shafts, revolutions per minute 110.

Boilers

Type—Scotch.
Number—Three.

Dimensions, diameter, ft., ins	17-6
Heating surface, for three boilers, sq. ft.	12,780
Working pressure, pounds	225

Main Condensers

Two—3 pass surface condensers, size, sq. ft. cooling surface each	3,400

Auxiliaries—Deck

Windlass, 14-inch x 12-inch worm geared. Hyde Windlass Co.
Capstan, 10-inch x 10-inch. Hyde Windlass Co.
Steering Gear. Right and left screw gear, Sun Shipbuilding Co. Engine 10-inch x 10-inch and telemotor. Hyde Windlass Co.
24 deck winches, 8¼-inch x 10-inch. Hyde Windlass Co.
For'd Capstan, 10-inch x 10-inch by Moore Plant, Bethlehem S. B. Co.

Auxiliaries—Below

Generators.
Two—Allis-Chalmers, direct-driven by De Laval steam turbines, noncondensing—240 K. V. A. at 3600 R. P. M.—220 volts, 60-cycle, alternators with direct-connected exciters—lighting on 110 volts, 60 cycles through balance transformers.
Main Circulating Pumps.
Two, 5500 G. P. M. De Laval centrifugal pumps, direct-connected to induction motors of constant speed.
Condensate Pumps.
Two—De Laval centrifugal direct-connected as above.
Air ejectors.
Four—Radojet type.
Auxiliary condenser.
One—2000 square feet cooling surface—two pass.
Main feed pumps.
One—Bethlehem Weir type, 15½ x 11½ x 27 inches.
One De Laval—5-stage centrifugal, direct-connected to constant speed induction motor.
Lubricating Oil Pumps.
Three—National Transit—vertical simplex, 8 x 11 x 18 inches.
Lubricating Oil Cooler Pumps.
Two—National Transit-vertical simplex, 8 x 11 x 18 inches.
Fire Pump
One—National Transit-horizontal duplex, 10 x 8½ x 10 inches.
Bilge Pump.
One—National Transit-horizontal duplex, 6 x 8½ x 6 inches.
Sanitary Pump.
One—National Transit-horizontal duplex, 10 x 7 x 10 inches.
Fuel Oil Transfer Pump.
One—National Transit-horizontal duplex, 10 x 9 x 12 inches.
Fuel Oil Service Pumps.
Two—National Transit-horizontal, 7½ x 5 x 6 inches.
Fresh Water Pump.
One—National Transit-horizontal, 4½ x 4 x 4 inches.
Oil Separator.
One—De Laval type.
Ice Machines.
Two—1-ton Brunswick-Kroeschell, direct expansion, direct-connected to induction motors.

geles, San Francisco, Oakland, Portland, Seattle and Tacoma. The J. L. LUCKENBACH is a fine, big ship 473 feet in length, 60 feet beam with a deadweight capacity of nearly 12,000 tons, and a speed of 14 knots. She has twin screws, driven by De Laval cross compound single reduction impulse type turbines. Full data on hull and machinery are in Table II.

Through the courtesy of W. L. Green, superintendent engineer of the Luckenbach Lines, complete operating data averaging the logs of all voyages from March 1, 1923 to Jan. 1, 1924, are given in Table III. It is interesting to point out that this vessel, with a maximum load draft of 31 feet, 1 inch, operated for all of this period with an average draft 30 feet 3 inches or with nearly full deadweight cargo throughout. Her performance has been regular and dependable without untoward incident. The turbines and reduction gears have given entirely satisfactory service. The application of alternating current electric motors for driving many of the auxiliaries has proved more economical, and superior to steam drive.

In no period of the history of transportation by water has economy in opera-

TABLE III

Average Operating Data of Fast Intercoastal Freighter J. L. Luckenbach

Note: Miles where used in this table are nautical miles of 6080 feet each. Period, March 1, 1923 to Jan. 1, 1924.

Service—Intercoastal—Between Boston, Philadelphia and New York on the Atlantic and Canal (mail), Los Angeles Harbor, San Francisco, Oakland, Seattle, Portland and Tacoma on the Pacific.

Cargo—General.	
Total time, days	305
At sea, days	148
In port, days	157
Distance traveled, miles	45,731
Average mean draft, ft., ins	30-3
Average speed per hour, miles	13.6
Average R. P. M	104.7
Average slip	10.6
Total fuel consumption, dock to dock, in barrels	57,149
Total fuel consumption, dock to dock, in tons at 6.7 bbls. per ton	8,530
Total fuel consumption, in port, in bbls	13,485
Total fuel consumption, in port, in tons at 6.7 bbls. per ton	2,013
Miles per ton of fuel oil	5.37
Fuel consumption in bbls. per mile	1.249
Fuel consumption in bbls. per day in port	85.6
Total lubricating oil consumption in bbls. for all purposes estimated on basis of 42 bbls. per 1 year's operation	35

Note:—The above performance is from dock to dock. Taking only the long runs, the average fuel consumption in barrels per day is 374.6 and the average of barrels of fuel per mile is 1.148.

The records of single long voyages furnish valuable data, as for instance, the following

Sailed—New York, Aug. 23, 1923.

Arrived—San Pedro, Sept. 7, 1923.

Time—Dock to dock, 14 days, 21 hours, 43 minutes.

Time—Bar to bar, 14 days, 6 hours, 39 minutes.

Distance—Dock to dock, miles, 4930.

Distance—Bar to bar, miles, 4869.

Average fuel consumption in bbls. per day	356
Average speed in miles per hour, bar to bar	14.2
Fuel consumption in bbls. per mile in run from bar to bar	1.044
Corresponding miles per ton of fuel	6.42

tion been of such urgent importance as in the present. Fuel consumption for a good sized, modern freighter represents from 25 to 30 per cent of the total disbursements but consideration of the one factor of fuel saving alone is not sufficient. The size, type, service, speed and the source or sources of supply of the fuel and the difference in capital outlay must be taken into account.

Each newly projected vessel is an individual problem and a competent analysis and study of comparative benefits must be made, allowing the best informed, unbiased engineering judgment to decide on the relative advantages of different types of power.

Attends Radio Meeting

In response to an invitation extended by Secretary of Commerce Hoover, Dr. Frederick A. Kolster, chief research engineer of the Federal Telegraph Co., San Francisco, has been nominated to represent the point to point and marine commercial interests at the third national radio conference, according to an announcement made by Ellery W. Stone, president of the Federal Telegraph Co. Dr. Kolster has been associated with the development of radio telegraphy since its infancy. The Kolster decremeter and the Kolster radio compass and position finder are among his many contributions to radio.

Urges Better Method of Comparing Diesel Costs

To the Editor of MARINE REVIEW:

The analysis published in your September issue of the bids submitted by diesel engine manufacturers for the Panama canal installation is extremely interesting, but seems to me not entirely conclusive.

The statement that "the speed range of the engines proposed is sufficiently close to eliminate a differential in price per brake horsepower due to a radical variation in weight" appears strange in the light of such information as has reached me regarding the specifications of the various engines.

Certainly a difference in the speed at which the rated horsepower is figured, of from 90 to 125 revolutions per minute is sufficient to make a huge difference in the price per horsepower. Taking an engine at 125 revolutions per minute and figuring its price at $70 per brake horsepower, means that running this same engine at 90 revolutions per minute would send the price up to over $100 per brake horsepower. Let us have the actual speed specifications of the manufacturers, and then we can make a real comparison.

As it happens, I am more or less in accord with your general conclusions, or rather those of the author of your article, but I could wish that he had delved a little deeper into the figures.

Another point of importance in this connection is the question: How many of these bids were based on engines actually in existence, and how many on designs never yet, in this country, embodied in anything more substantial than lines on paper? We all know that the best and most experienced designers in the world do not always find their paper expectations realized in the finished mechanism. Personally I have yet to hear of an engine of any description that came out in metal precisely as it was conceived on paper.

When all the manufacturers bidding on the Panama canal job have built their engines and set them up on the block, they—and we—will have a great deal better basis for analytical comparisons than we have now.

(Signed) H. M. Hitchcock.

Barge rates from Hampton Roads to Boston have been revised and are now as follows; cargoes of 3000 tons or over 95 cents, carges of 3700 tons or over 90 cents. The demurrage rate on all barge cargoes of 3000 tons is 5 cents per ton per day.

CAPT. ELMER E. CROWLEY, formerly of Boston, has been appointed special expert for the shipping board by Admiral Palmer.

New Depth Finder

Automatic Instrument Now Employed to Take Accurate Soundings at High Speed

Depth recorder by which navigating officers can see a continuous record of the depth of water over which they are sailing

CENTURIES ago, so long since that the exact time is not known, that most indispensable of all the aids to navigation, the magnetic compass, was discovered by the Chinese. Curiously enough, recent investigations have developed that the compass was originally used for journeys on land over the great deserts of China. Though many improvements and refinements in mechanical details and manner of installation have taken place, the principle of the compass remains unchanged up to the present day. Not until within the past few years in the introduction of the gyroscopic compass has modern science been able to offer the mariner an independent and better method of establishing his course.

An accurate and efficient method of determining the depth of water under the vessel would surely be considered next in importance to the compass as an aid to safe navigation, and under certain conditions in the approach to land through difficult and dangerous waters, of even greater importance.

Replacing the Lead

The purpose of the present article is to describe and illustrate a practical, efficient and accurate automatic depth sounder for use on ship board. An analogy exists between the story above of the ancient magnetic compass and the modern gyroscopic compass, and the discovery and practical perfection of this new sounding device known as the fathometer. In both cases, centuries passed before an apparatus, in each instance working on a totally different principle from those in use, was perfected to determine two important facts in navigation.

The analogy ends there, however, since for their respective purposes, the magnetic compass is incomparably superior to the sounding lead in current use on ships. The development of a thoroughly practical, automatic sounding device based on entirely new principles, therefore, undoubtedly represents proportionally as great a contribution to the art of navigation as did the discovery and perfection of the gyroscopic compass.

Since the very beginnings of navigation, mariners have of course been concerned about the depth of water under their vessels and until comparatively recent times the method used for its determination has been the same, that is, dropping overboard a weight attached to a line and measuring the length of line when the weight touches the bottom.

The best and most farreaching improvement on this method is the Kelvin sounding machine perfected during the present generation. A line and lead and contact of the weight with the bottom is needed with this machine just as in the hand lead. However, its accuracy is much greater as it depends for its readings on the relation between depth and pressure of water. The pressure is indicated in a glass tube within the lead and by applying a scale the depth may be read off accurately. The mechanical arrangements such as a proper reel and outrigger make the casting of the lead much easier and more dependable than by the old hand method. This method is now generally used on ships. Since a mechanical contact with the bottom is required, the length of time to take readings will vary with the depth of water. The shallowest soundings probably take at least 10 minutes.

Many other attempts have been made to develop some practical means of sounding without mechanical contact with the bottom. These attempts led into fields where the value of the application of science to the solution of a practical problem is brilliantly demonstrated. In 1854, Siemens invented a method based on the principle of gravity for determining the depth beneath a ship. This method depends on the fact that the pull of gravity will vary according to the density of the matter over which it acts. As the surface density of the earth is nearly three times that of water, by using a mercury column maintained in position by a spring, a variation in the height of the column takes place for varying depths of water. To detect these small variations in the height of the column, Siemens used a delicate multiplying device and thus indicated the depth of water. Great patience and ingenuity was shown by the inventor in developing a practical working device. It was possible with this apparatus to prepare a profile map of the sea bottom which was of the greatest importance in determining the path for the first Atlantic cable. Though this apparatus worked with rapidity and accuracy, its use never became general, because of the delicacy and precision of adjustment necessary for its operation.

Use of Sound

The next attempts were based on the principles of acoustics, sound and its echo. It was found that water is a much better conductor of sound than air. Prof. R. A. Fessenden first demonstrated the possibility of echoes for determining

depth of water by timing the return of echoes from sounds created under water. Experiments conducted with the Fessenden oscillator showed that echoes were returned and could be heard, from great depths. In one instance near the Azores, sound waves were echoed back from the bottom 3000 fathoms deep, a distance down and back of nearly 7 miles. The rapidity of the travel of sound in water, 4800 feet per second, however, made the problem of timing the return of echoes in shallow depths extremely difficult. A number of different applications of the echo method of depth soundings have been proposed and much research and study has been devoted in attempts to discover the most practical way to utilize the principle.

Among others, Marti, a Frenchman, experimented with explosives for creating his sounds and obtained measurements of great accuracy. He found that one pound would serve for 250 explosions for sufficiently loud sounds. The sound of the explosion and the echo were received in a hydrophone and recorded by an accurate chronometer which could measure time intervals of 1/1500 of a second. More recently, Marti has perfected a registering oscillograph which traces a continuous record of the depth beneath the ship, automatically making a profile map of the ocean bottom.

Behm, in Germany, has also experimented with a somewhat similar method using exploding cartridges as a sound source and a chronometer for measuring the time interval of return echo and thus the depth of water. Both of these methods have the obvious disadvantage of needing supplies of explosives. More recently, the Marti method has been combined with a high frequency sound source, developed by the French physicists Langevin and Chilowsky.

Locating Submarines

In the United States where the first experiments were made by Fessenden, experimental work of great accuracy and importance has been carried out by the United States navy and the Submarine Signal Corp., Boston. An extremely interesting application of the echo method was discovered and was found to be quite accurate for shallow depths though not automatically operated. During the war, an apparatus was perfected for listening to the faint noise made by the propeller of submarines and to determine the direction of these sounds so as to locate them even in submerged condition.

This listening device was mounted near the bow of the vessel so that most of the hull of the vessel was between the apparatus and the ship's propellers. It was found, however, that the sound waves created by the action of the propellers of the vessel upon which the listening apparatus was installed could be heard and that the angle from which these sounds came depended upon the depth of the water. The sounds from the propellers traveled to the bottom and were then reflected upward to the listening apparatus. In very deep water, the sound seemed to come from straight below, while in shallow water its direction was nearly horizontal. By making a table showing the depth corresponding to different angles, soundings could be easily made. When the water was deeper than the length of the vessel, the results indicated a loss in accuracy. The results obtained in all of these experiments with sound and its echo in water and its application to the determination of depth convinced the Submarine Signal Corp. that a practical, automatic depth finder suitable for measuring any depth, from the shallowest required to the deepest, could be developed with further study and experimentation. A depth sounding apparatus, for use on vessels, called the fathometer, described in detail below is the practical result of the work done by the research laboratory of the company in carrying this idea through to a successful conclusion.

Problems Met in Experiments

It may be well first to outline briefly some of the fundamental problems which had to be solved. Sound travels through water at the rate of 4800 feet or 800 fathoms per second so that if a depth of 40 fathoms is to be measured only one-tenth of a second elapses between the instant when the sound is created and the moment the returning echo is heard.

If it is desired to know the depth within a fathom, the measurement of the time interval must be accurate to 0.0025 seconds. To measure to one fathom is not necessary as a practical proposition but a depth of three fathoms and five fathoms requires measuring a time interval of 0.0075 and 0.0125 seconds respectively, and even these intervals presented a difficult problem when designing a sturdy practical apparatus for a ship at sea.

For such short time intervals, if the sound made had any appreciable duration, the echo would be returned before the original sound ceased and, therefore, could not be distinguished. It was essential, therefore, that some source of sound waves be used, where for a necessary degree of accuracy the original disturbance would cease within 1/100 of one second. Sound producers which depend on a single sharp blow on a diaphragm would meet such a requirement but with such sounds difficulties arise in the receiving end as it is impossible to use sharply tuned or selective receivers, and the particular echo in question could not be distinguished from other ship's noises. To overcome this difficulty, a sound producer was developed which gave a short musical note or continuous wave and one which could be excited during a small interval of time. Receivers tuned for this particular wave length of sound could thus be used for receiving the echo, minimizing the effect of all other noises whether from the water or the ship.

The complete depth sounding apparatus finally perfected consists of the following: Two sound producers known as oscillators, one attached to each bilge keel somewhat forward of midships; two hydrophones located at the bottom of the ship, one on each side of the center line; electric cable, relays and filters, and the indicator mechanism located in the pilot house, on the dial of which can be read directly and continuously the depth of water over which the ship is passing.

The oscillator is essentially a steel plate of rectangular shape (made up of two plates firmly clamped together on the edges, both hollowed out on their faying surfaces, within which reposes a powerful electromagnet) with dimensions chosen so that its natural period of vibration is 1050 cycles a second, which gives a clearly distinguished musical tone under water. The approximate dimensions of this particular oscillator complete is 2 inches thick, 8 inches wide and 4 feet long. The plate or diaphgram is actuated by energizing the electromagnet with an alternating current so that vibrations are set up with a frequency of 1050 times per second. When the current ceases to flow, the pressure of the water on the diaphragm acts at once as a brake so that the signal ends abruptly and does not merge with the returning echo.

Use of Hydrophone

Echoes from the sound sent out by the oscillator are detected and received by the hydrophone. The hydrophone is really a microphone, similar to those used in telephone transmitters for changing sound waves to electrical waves. It is enclosed in a watertight case and is connected to a diaphragm in contact with the water. The diaphragm is at once affected by any underwater vibrations, and in turn transmits them to the microphone button, where they produce an electrical current, variations which are true reproductions of the underwater disturbances. It is sometimes necessary to increase the feeble electrical energy produced by the echo and to filter out foreign disturbances. This is done by

passing this current through a vacuum tube amplifier, with circuits tuned to receive only the wave frequency set up by the oscillator.

From the hydrophone, the current goes to the indicating instrument, located wherever desired above deck, preferably in the pilot house. Here the time required for the sound to reach the bottom and the return of its echo is accurately measured, and the corresponding depth in fathoms automatically indicated on a graduated dial. As the time interval for the return of the echo in comparatively shallow water, say from 3 to 100 fathoms, is small, the indicating instrument has been designed to give a high degree of accuracy by means of a visual, instead of an oral method.

How Finder Operates

The general appearance of the indicating instrument is shown in the accompanying illustration. All the indicator mechanism is of substantial and fool proof construction, and there are no delicate adjustments to be disturbed by the rolling of the ship or by severe shocks. Though of simple and sturdy construction, this instrument is quite accurate and readings can be depended upon within a fathom.

The method of operation follows. A small electric motor running at 1000 revolutions per minute rotates a shaft by means of a gear ratio at 240 revolutions per minute or 4 revolutions per second. On this shaft is mounted a circular disk and a cam. In front of the disk, a circular glass plate graduated in fathoms from 0 to 100 is set up in fixed position. One hundred fathoms is the depth from which an echo could return during a quarter of a second or one rotation of the shaft. The disk on the shaft has a small radial slit near its periphery with a glow discharge tube (a glass tube filled with a gas which glows when the circuit is closed) directly in back of it. The cam on the rotating shaft is timed to close the circuit of the sound producer or the oscillator every revolution, sending out a sound just as the lamp behind the slit in the disk is opposite the zero mark on the scale, a current passing through the lamp at the same instant. An echo from the sound sent out is returned and the hydrophone picks up the sound waves of this echo converting them into a feeble electrical current which passing through a relay sends a luminous discharge through the rotating lamp behind the slit.

The position of the slit at the instant it is illuminated, as read off on the graduated glass dial, represents the depth of water, directly in fathoms.

If the depth is shallow, the time interval between the sending of the sound and the return of the echo is, of course, exceedingly brief and the lamp behind the slit in the rotating disk will become luminous in a fraction of a revolution. If the depth is 100 fathoms, the disk will have time to make one complete revolution before the lamp becomes luminous from the return of the echo, and the position of the slit and lamp will again be at zero on the glass dial. As the disk rotates at the rate of four revolutions a second, four soundings are taken each second. When the depth is uniform, it is so indicated by the steadiness of the lighted slit at about the same place on the scale. When the depth changes quickly, the position of the lighted slit varies to correspond. As there is only one-quarter of one second between each sounding and its corresponding echo, to the eye, the indicating lamp appears nearly constantly lighted.

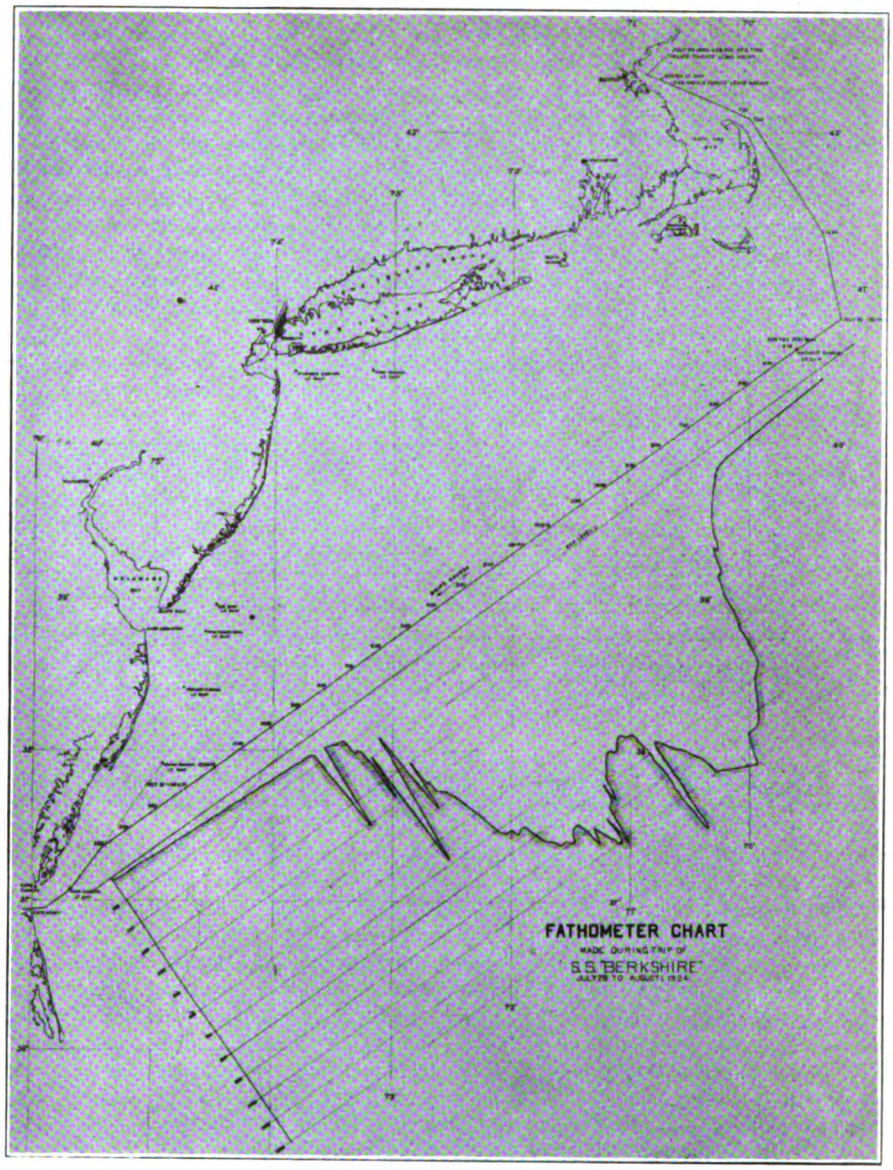


CHART OF OCEAN DEPTHS MADE ON RUN BETWEEN NORFOLK AND BOSTON THROUGH USE OF NEW DEPTH FINDER

When depths over 100 fathoms are encountered, the method of observation is altered to suit the greater time intervals between the sending of the sound and the return of the echo. By means of a single gear control, the speed of the rotating shaft is reduced to one revolution per every one and one half seconds, which is the time between the sending of a sound and the return of its echo from a depth of 600 fathoms. The circuit of the oscillator is thus closed and soundings made, once every one and one-half seconds.

Taking Deep Soundings

To differentiate clearly between the deep readings, over 100 fathoms, and those less than 100 fathoms, a different color, light and a different scale are used. Also to extend the readings to depths from which the signals are too weak to operate a relay with certainty, the echoes are sent through a telephone and the revolving light is

kept continuously luminous. By noting the position of the revolving light, on the larger scale graduated from 0 to 600 fathoms at the instant the echo is heard through the telephone, the depth of water can be read off directly. Should the depth be greater than 600 fathoms, the revolving light will have time to make more than one revolution and the depth can be accurately determined by adding to the reading on the scale, 600, 1200, etc., fathoms, according to the number of complete revolutions of the light between the instant of actuating the source, that is, closing the oscillator circuit, and the instant when the echo is heard.

The apparatus described above has been thoroughly tried out under actual service conditions and has been found to be practical and accurate. The operation requires no delicate adjustment and it may be started by simply pushing a button in much the same way as one would put on an electric light. Soundings are so closely timed that any deep depression or local uncharted irregularity will not lead into an error, the readings immediately before and after such readings showing their relative extent and importance. A continuous series of soundings shows by the constant or varying nature of the light flashes whether the bottom is level or of changing contour, while the character of the echo sound makes it possible for an experienced operator to judge the nature of the bottom with a fair degree of accuracy.

The facts given in this article are supported by actual results obtained with this device in practical service over a period of nearly one year on the freight ship HAMPDEN of the Coastwise Transportation Co., and its operation proved entirely satisfactory to Charles Skentlebery, marine superintendent of this company. At present and for 12 or more voyages, this apparatus has been in completely successful operation on the BERKSHIRE, a passenger and freight vessel of the Merchants & Miners Transportation Co., Baltimore, operating between Baltimore, Norfolk and Boston. The accompanying contour chart of the ocean bottom over the course of this steamer was plotted from readings taken on the fathometer during this voyage. A navigating officer is enabled by the use of this instrument to obtain immediate and visual indication when his ship comes on soundings. At present this fact is established by a sort of cut and try method by using the lead. As it takes time to make soundings in this manner, the ship will cover a considerable distance during the process. When on soundings, the depths indicated regularly and frequently by the fathometer will locate the position of the ship by reference to the chart.

All those who have seen this apparatus in practical operation are greatly impressed with its accuracy, certainty and simplicity. That it will revolutionize the present commercial methods of depth sounding on ship board is a general conviction.

Test New Double Acting Oil Engine

A NUMBER of general descriptions, including the one in MARINE REVIEW for September, have already been published of the new single cylinder unit, double acting 2-cycle oil engine designed and built by the Worthington Pump & Machinery Corp., New York. This first single cylinder engine is a complete practical engine developing 600 brake horsepower at 90 revolutions per minute and 800 brake horsepower at 120 revolutions per minute with an average mean effective pressure of 60 pounds per square inch. The cylinder diameter is 27 inches and the stroke is 40 inches. It is the practical forerunner of 3, 4, 5 and 6 cylinder units developing 1800, 2400, 3000 and 3600 brake horsepower at 90 revolutions per minute at the same mean effective pressure and cylinder diameter and stroke.

On Aug. 28, after eight days' continuous operation of this single cylinder engine in the Snow-Holly works of the company at Buffalo, a number of marine men were invited to witness its operation and to be present when it was dismantled for the first time to permit inspection of the cylinder and running parts. The dismantling of the engine took only 1½ hours. In the unanimous opinion of the interested spectators, the engine ran smoothly without noise or undue vibration and it was slowed down, stopped, reversed and speeded up at the will of the operator with just as much certainty and with less manipulation than are required for the same operations on a reciprocating steam engine. The accompanying illustrations show the complete engine and different parts of the engine after dismantling. A thorough inspection of the upper and lower cylinders, piston, piston rings and piston rod, spraying nozzle tips, cross head and slide revealed all parts in perfect condition. The true smooth surfaces of the cylinder and the piston rod indicated clearly entirely satisfactory lubrication during the eight days continuous run.

Details of Engine

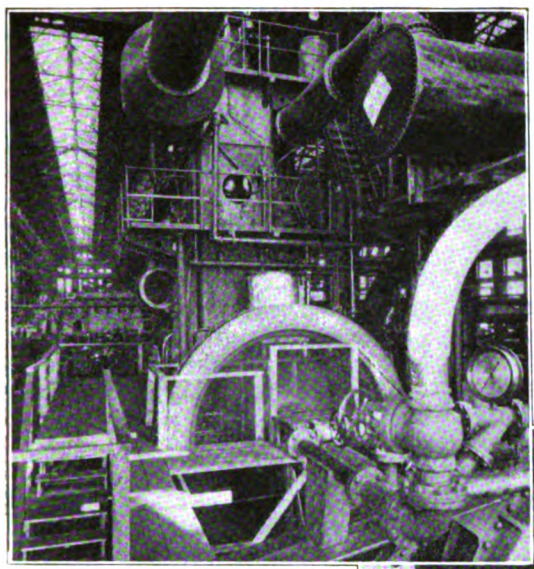
Engineering development work must be carried out at extremely heavy expense if progress is to be made in the mechanical arts. The Worthington corporation, therefore, deserves great credit for the bold and enterprising step which it has taken in the completion of an American oil engine applying the double acting principle. Its long experience in building gas engines and oil engines, and the research, study and experiments which have been carried out under the supervision of highly skilled experts of many years' practical experience in oil engine design and construction, backed by the high standing and reputation in engineering work of this company, can not help but create an atmosphere of confidence in a product which satisfies its own standards. Clearly from motives of self-interest alone, a new product such as this 2-cycle double acting engine must successfully pass the most searching criticism from all sources. Consequently, the company has adopted the very antithesis of secrecy in regard to the details of design and construction of this engine. The marine public and highly qualified engineer representatives of shipyards, steamship companies and the shipping board have witnessed the engine in operation and have seen it dismantled directly after operation. Every part has been carefully scrutinized and every question raised has been answered frankly and fully.

The engine illustrated herewith and recently tested in Buffalo, is a 2-stroke cycle, double acting, air injection, heavy duty oil engine, particularly adapted when built in units of two or more cylinders for directly connected marine installations.

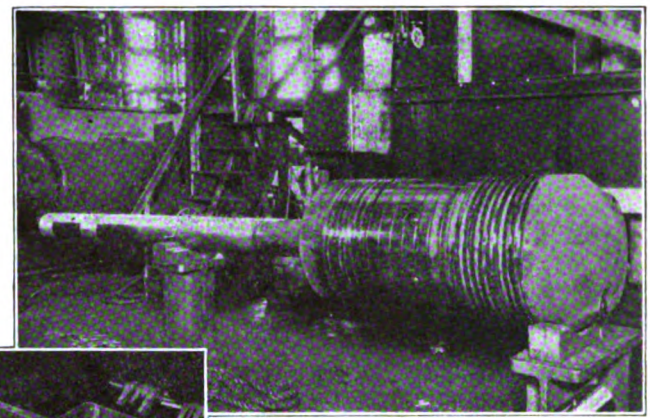
A 2-stroke cycle in a single acting engine means a power stroke each revolution or every time the piston moves downward. A double acting engine operating on a 2-stroke cycle has two power strokes each revolution, that is, one acting down and on the top surface of the piston and one acting up on the bottom surface of the piston.

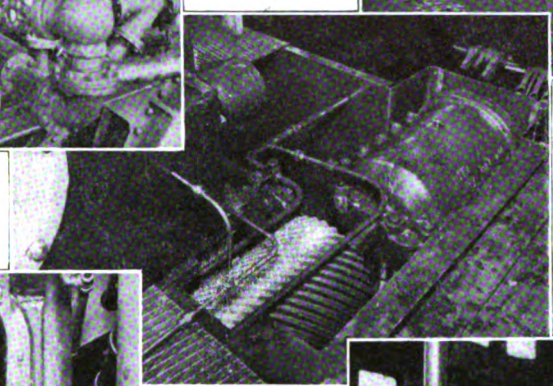
Without going into a detailed technical description, certain interesting features of this engine may be pointed out. In effect, there is really two independent, single acting cylinders, making the top and bottom ends of the double acting engine.

Both cylinders are made alike, of a steel shell, dome shaped at ends to resist the pressures. They have cast iron liners and are surrounded by light jackets of cast iron. Scavenging air is

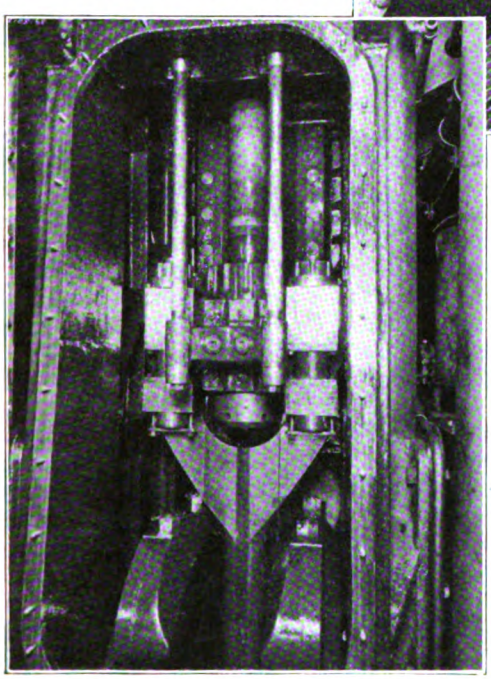


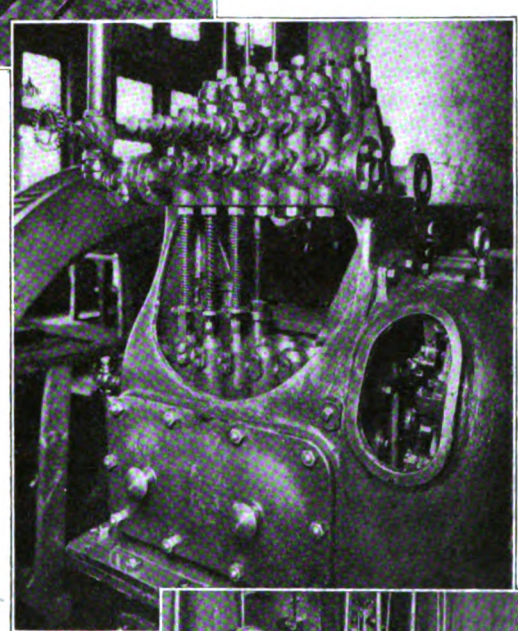
Rear view of engine (above), reverse gear mechanism (right)

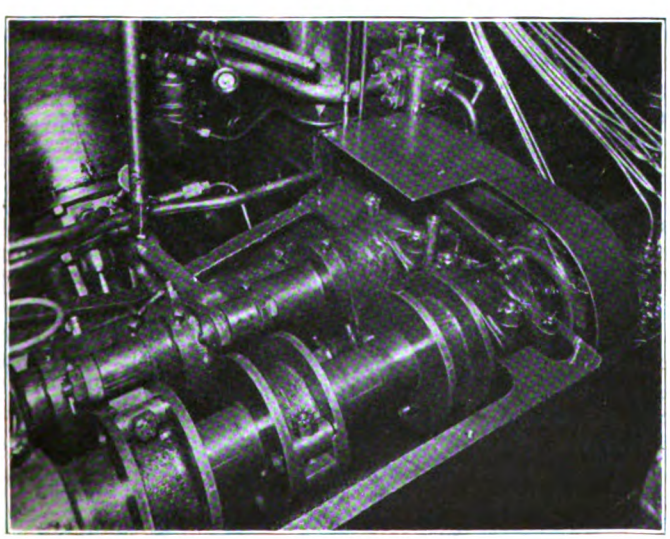


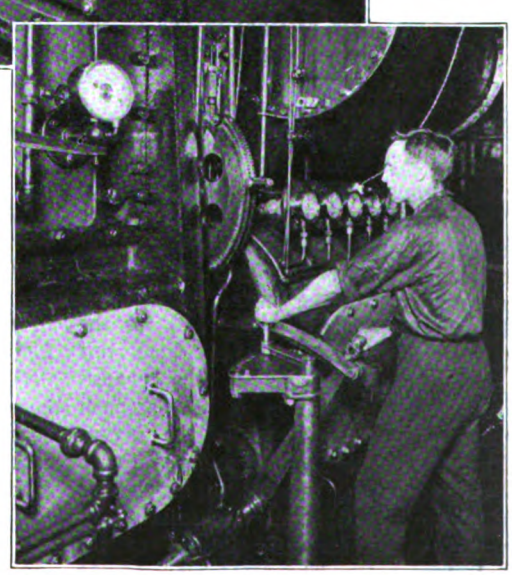


Piston and rod after 8-day test (above), fuel oil pumps (below), operating platform (bottom right) camshafts for operating fuel valves (bottom left) Piston rod, cross-head, connecting rod and crank (left center)









taken in through ports located on one side of the cylinders at the middle position of their combined length and the exhaust ports are in the same location vertically but on the opposite side.

Fresh water used for cooling is taken in at the center of the cylinder base and passes simultaneously upward through the top cylinder jacket and downward through the bottom cylinder jacket, regulated at the two outlets with independent valves. By this arrangement, the two cylinders are independently free to expand from their comparatively cool ends toward the hot ends where combustion takes place. One fuel valve is fitted at the center of the top of the upper cylinders, while the bottom cylinder has two fuel valves. These fuel spray valves are fitted with nozzles for directing the jet of fuel air mixture.

In a similar way, the piston is built up of two single acting pistons, each resting on and bolted to a flange on the piston rod. The two ends, separated by a sleeve in halfs recessed on the piston rod, are free to expand. The piston heads are forged steel and are shaped to act as deflectors on the scavenging air side and on the exhaust side to allow ready outlet for the exhaust gases.

Reversing the Engine

One cam is used for each fuel spray valve. Each valve lever oscillates around an eccentric on the fulcrum shaft which can be turned by hand to regulate the valve lift at slow speeds. By turning the cam shaft through 34 degrees, the engine can be reversed. This is accomplished by means of a hand valve operated hydraulic mechanism, using oil from the lubricating system which is under constant pressure. A large helical spur gear on a rod actuated by a piston operated in either direction by admitting oil under pressure to one or the other side moves in one or the other direction. On account of the diagonal teeth of this gear, in contact with the gear on the cam shaft, its motion fore and aft will rotate the fuel valve cam shaft through an angle of 34 degrees.

Lubricating oil is pumped from the bed plate sump, passed through a strainer and a cooler and then to a large storage tank in the engine casing. Oil for the forced feed system and for the maneuvering gear is taken from this tank. Scavenging air in the present engine is supplied by a displacement pump directly connected to the engine. The size of this pump is sufficient for a 4-cylinder engine. In order to increase the efficiency of this pump, mechanically operated valves are used instead of the voluntary type. The cross head of the scavenging pump is also used as a single acting piston in the first stage of the air compressor. The remaining three stages are located at the rear of the engine, driven by a beam from the same connecting rod which drives the scavenging air pump. Other auxiliaries essential to the engine's operation may all be run from the main engine. Such an arrangement will make it unnecessary at sea to run any auxiliaries with the exception of an electric generating set for driving the steering gear and any deck machinery it might be necessary to use and for lighting.

There can be no difference of opinion in regard to the practical advantages to be gained by using the double acting principle in oil engines of larger size. No one would now think of building single acting reciprocating steam engines. However, difficulties in design and construction have retarded progress along this line. Particular difficulty has been met in overcoming the effect of heat stresses in the cylinder and in replacing the spent gases by pure air. The successful trial of the present engine seems to indicate that these problems have been solved by the methods of design used.

It is well known that oil engines are generally built to operate on either a 4-stroke cycle or a 2-stroke cycle and in each case single acting, that is, receiving the power stroke on one side only of the piston. If the practical difficulties of design and construction are overcome, engines can be built to operate double acting on either principle. The engine described in this article is a 2-cycle, double acting engine whereas in Europe at the present time, large 4-cycle double acting marine oil engines are under construction on definite order for large vessels now building.

Relative Power Developed

In a 4-cycle engine, one out of every four strokes of the piston or one stroke every two revolutions of the crank is a power stroke. In a 2-cycle engine, one out of every two strokes of the piston or one stroke every revolution of the crank is a power stroke. When the double acting principle is applied, in the 4-cycle engine, one out of every two strokes of the piston or one stroke every revolution is a power stroke, while in the 2-cycle engine every stroke of the piston or two strokes every revolution are power strokes.

On this basis, off-hand for the same bore and stroke, one might be led to the conclusion that the power developed in each of these four classes, that is single acting, 4-cycle, single acting, 2-cycle, double acting, 4-cycle, and double acting 2-cycle, would be in the following proportions—1-2-2-4. This, however, does not follow as there is some reduction in power due to the reduced area of the lower side of the piston on account of the rod and some slight interference of the rod with carrying out the cycle. Also, the mean effective pressure in a 2-cycle engine is less than in a 4-cycle. Consequently, as worked out by the Worthington engineers, the proportions of power for the same bore and stroke would be 1-1.56-1.90-2.96. On this basis, for the same bore and stroke, a double acting 2-cycle engine will develop approximately 90 per cent more power than the single acting 2-cycle engine and 196 per cent more power than the single acting 4-cycle engine.

Saving of Weight

The advantages claimed for the double acting, 2-cycle engine are, therefore, less weight and space occupied for the same total horsepower. It is impossible to say at this time just how much this saving would amount to. At the present time, an estimated saving in weight of 20 to 25 per cent and in length of around 20 per cent may be anticipated with a certain degree of assurance. It is possible that continued operation of the engine described here will show that it has been too conservatively rated and that heat stresses in the cylinder have been held down to a lower point than necessary for entirely satisfactory operation. Another advantage claimed for the double acting engine is that owing to the greater number of power impulses communicated to the crankshaft, a smaller diameter of line shafting to the propeller will be allowed. Also, the maximum bearing pressures are less and will compare favorably with those for the 4-cycle, single acting engines.

Any advances made by any manufacturer in developing the oil engine for marine purposes will be helpful to the entire industry in adding impetus to its wider use and will increase the range of types of vessels for which this type of power is suitable. The accomplishment, therefore, in this instance, of the Worthington Pump & Machinery Corp. has created a great deal of interest among other manufacturers as well as shipyards and steamship owners.

The new and modern river steamer DONORA, built by the Howard Shipyards, Jeffersonville, Ind., for the American Steel & Wire Co., Pittsburgh, to operate as a pool boat around Pittsburgh, had a successful trial in August. The Power Specialty Co., New York, which has fitted its superheaters in this steamer, was represented by its Cincinnati agent, F. W. Leahy and by J. J. Nelis, New York.

United States Needs More Ports

Comparison of European and American Commerce Shows This Country Lags in Supplying Port Facilities

BY R. S. MAC ELWEE

A STUDY of the superimposed maps of Europe and the United States with the principal ports indicated thereon brings out strikingly several facts. The regularity of the contour of the United States works a great hardship on producers in the interior as compared with the irregular outline of Europe that puts many serviceable seaports within comparatively short distances from points of production and consumption. This is particularly true with regard to our great agricultural communities of the Middle West producing grain and livestock. Compared with a distance of one hundred to two hundred miles in Europe, perhaps as much as three hundred in Russia, but much less in Roumania, our agriculturists are one thousand to two thousand miles from the seaboard. The only remedy is the St. Lawrence ship channel that will allow ocean ships to proceed through the Great Lakes, thus extending the ocean inward more than 1000 miles. Compared with the Great Lakes, that extend less than half the distance across the northern end of our continent, Europe has the Mediterranean and Black seas system on the south, and the North sea and Baltic on the north.

Table I shows the population and area of the United States compared with that of Europe. In population

Table I

Population and area of the United States compared with Europe in 1921

	Population	Area
United States	107,833,284*	3,026,789
Europe	487,741,055	5,166,476

*Official estimate of the United States census bureau.

Europe is almost five times as densely populated on an area larger in the relation of 5 to 3. Europe is larger in area by 5 to 3 but larger in population by 5 to 1. It would seem therefore, that although the two areas do not differ greatly in size, the great press of population of Europe would make the large number of ports necessary and that such a necessity would not exist in the case of the United States. We may drop out the great mass of European Russia which includes Soviet Russia, the Ukranian republic, the White Russian republic, the Crimean republic, the German Volga commune, and the several Caucasian states as they have ceased to belong to commercial Europe, at least for the present. This takes off the excess of area over that of the United States putting the two on an equal basis of comparison as to area.

True comparison, however, must be based on the volume of commerce, not the population. In considering the volume of commerce, we are thoroughly justified in counting the coastwise and intercoastal commerce of the United States as "foreign" commerce. Compared with our 48 states and the District of Columbia, Europe, only somewhat larger (5:3), has 37 independent states. Table II shows the comparison:

Comparison of Commerce

The coastwise movement between states of the United States, for instance, between the state of New York and the state of South Carolina, or the state of Texas and the state of California, and Spanish or Swedish ore to Rotterdam similar to Minnesota ore moving to Ohio and Pennsylvania furnaces, in Europe is *foreign* commerce because these European states are independent national governments, while our sovereign states of the United States rate as part of one national government. In this manner, adding for 1920, 110,700,000 tons of coastwise trade to our approximately 132,000,000 tons of foreign trade, gives the United States a total of foreign commerce of 242,700,000 tons compared with Europe 268,700,000 tons. Including the Great Lakes, the United States engineers' statistics give 404,000,000 tons.

In other words, in an area approximately the same as Europe, counting out Russia, the United States has approximately the same total seaborne commerce carried on by a population only a little more than one-fifth as great. Although no figures are available for Europe for the year 1922, the total foreign and coastwise commerce of the United States is about 294,000,000 tons, which is considerably in excess of the total foreign trade of all the European countries in 1920. Including the Great Lakes it is 387,000,000 tons.

Thus our foreign and coastwise commerce over the magnificent distances of these great United States is already in excess of that of Europe by more than a fourth and this before our population has reached little more than a fifth of that of Europe. Yet, as the map will show, the coast of Europe is dotted with important gateways of commerce while with the exception of New York, the port of the greatest tonnage movement in the world, we have no ports that approach in volume Liverpool, London, Hamburg, Bremen, Rotterdam, Antwerp and Havre, while our ports of Philadelphia, Baltimore, New Orleans and Galveston, Seattle and San Francisco are in the class with Marseilles, Copenhagen, Odessa, Amsterdam and Danzig. In other words, Norfolk, Charleston, Savannah, Mobile, Los Angeles and Portland, Oreg., about exhaust the list of the smaller American ports, while the British Isles alone can double them in number and tonnage movement, not to mention the long list of well equipped ports such as Brest, Nantes, Bordeaux, Vigo, Oporto, Lisbon, Cadiz, Malaga, Cartegena, Valencia, Barcelona, Genoa, Naples, Palermo, Venice, Trieste, Fiume, Pyraeus, Salonica, Galatz, Batum and a lot more on the south, without even mentioning those on the north.

This can indicate only one thing,

Table II

Total net registered tonnage of foreign and coastwise trade of the United States compared with the foreign trade of Europe

	Calendar Year 1920 Foreign trade	Coastwise trade	Total trade
United States	131,772,913†	110,691,175‡	242,612,227
Europe	268,718,000	.....	268,718,000
*United States	130,029,948†	163,800,000‡	293,829,948

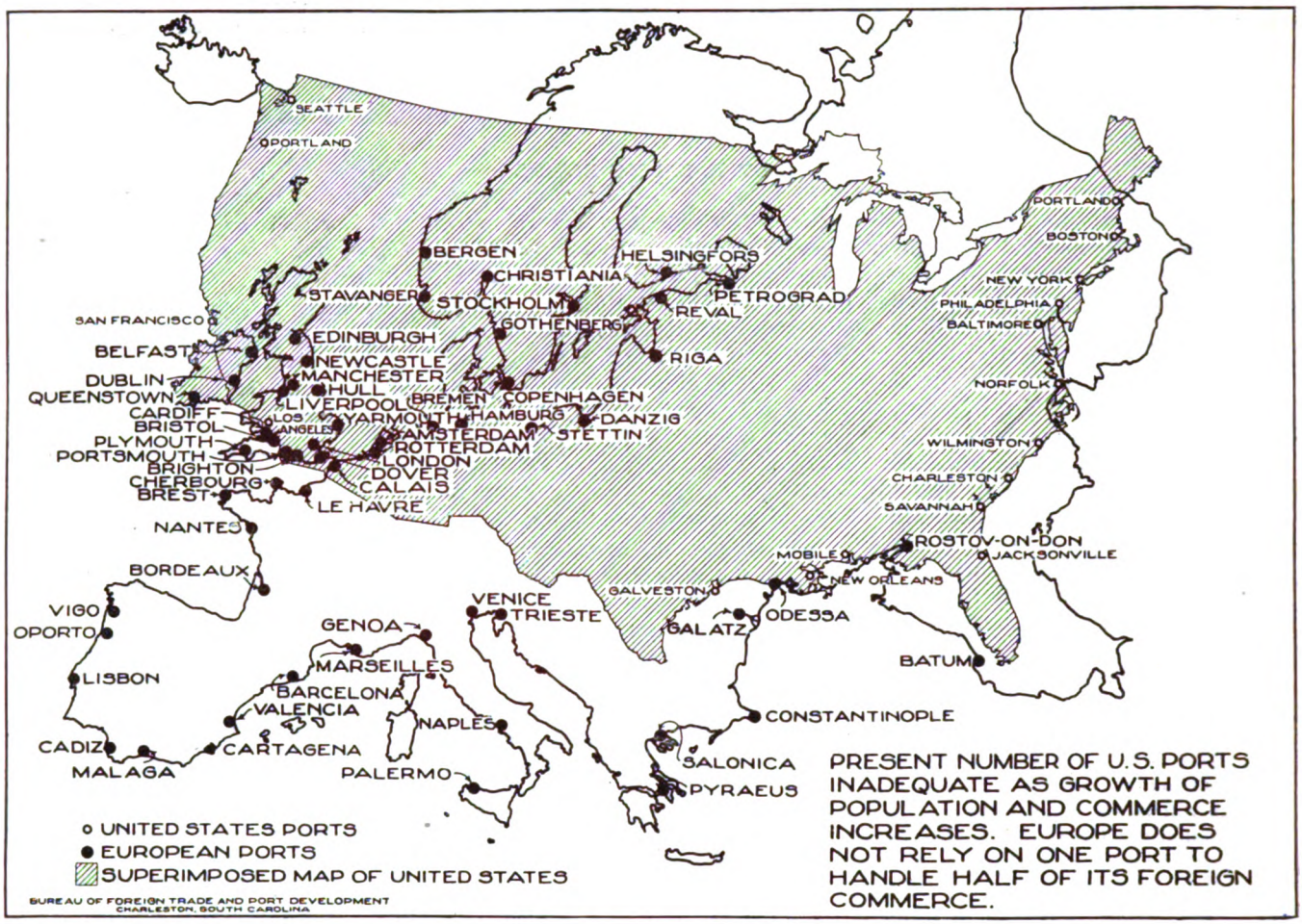
*Calendar year 1922.

†Figures obtained from Statistical Abstract, bureau of foreign and domestic commerce, page 345.

‡Figures for United States foreign net registered tonnage were available only. Coastwise net registered tonnage was arrived at by the following formula. Cargo tons of 2000 pounds in both foreign and coastwise trade were secured from United States engineers figures. The formula then is: United States foreign trade in cargo tons = A; United States foreign trade in net tor = B; United States coastwise trade in cargo tons = C; coastwise net registered tonnage = X. Thus A:B :: C:X.

The author, R. S. MacElwee is commissioner of foreign trade and port development, Charleston, S. C., former director of the United States bureau of foreign and domestic commerce and author of *Ports and Terminal Facilities, Wharf Management*, etc. The following is an advance chapter from his new book on *Port Development*.

COMPARED WITH EUROPE, UNITED STATES HAS FEW PORTS



namely, the swollen commerce of New York on the one hand, almost double the capacity of any other port in the world, and the puny appearance of the tonnage movements of all other American ports as compared with the splendid list of excellent gateways through which our European competitors may ship their goods by the short rail haul, with low terminal charges. Thus they are in a position to gradually drive American commerce from the markets of the world. This has become a sad fact in numerous classes of commodities since the World war.

With the exception of the Great Lakes-St. Lawrence, we can not correct our rotund boundary line, from which the producing centers find themselves so far removed, but we can develop direct line services to the nearest possible ports on an equitable rate basis, and, through our great American ability for efficient organization, reduce to a minimum the transportation charges of our producers, and thus maintain in the face of low European wages and proximity to the sea, our place in the sun in international commerce.

Just take one example. The great new southern cotton mill section, most of it 200 miles or less inland from Wilmington, Charleston, Savannah and Jacksonville, because of artificial conditions caused by unequitable ocean and rail rates, has been shipping its products one to two thousand miles out of the way to New York and Boston, only to be reshipped to Latin America and the Far East, within hailing distance of the lightships marking the entrances to these same ports of Wilmington, Charleston, Savannah and Jacksonville. The cost of the haul north and south compared with the direct line through these ports, if ocean rates were adjusted, would just about make the margin of difference by which the European competitors are now cutting prices in these foreign markets.

Table III

According to the Statistics of the U. S. Engineers Calendar Year 1920

Port group	Foreign trade	Coastwise trade	Total foreign and coastwise trade
		Tons	
Atlantic	66,866,868	58,585,941	125,452,809
Gulf	24,786,115	14,266,789	39,042,864
Pacific	8,731,223	21,771,830	30,503,053
Great Lakes..	12,388,707	196,740,637	209,128,344
Total	112,772,913	291,365,197	404,127,070

Calendar Year 1922

Port group	Foreign trade	Coastwise trade	Total foreign and coastwise trade
		Tons	
Atlantic	52,560,376	73,035,044	125,560,376
Gulf	24,489,956	15,692,633	40,182,589
Pacific	9,824,261	37,274,172	47,098,433
Great Lakes.	13,005,132	161,175,033	174,180,165
Total	99,879,725	287,176,884	378,021,563

Comparative statistics in the study of this question have been extremely difficult and sometimes impossible to procure. Yet on the very face of it, as shown in the chart of the superimposed maps and ports, the government of the United States is not only justified in adopting a policy of encouragement in the development of the outports, but the situation has already reached a point where it is an urgent national duty to do so if we are to continue to grow as we should as a world shipping and trading nation.

Boston has tried to obtain a lower export rate, that is, to be put on the rate basis of Philadelphia and Baltimore, instead of the present New York rate. Boston failed in this first effort in 1923, being completely overwhelmed by New York, Philadelphia, and Baltimore. In view of the fact that Boston is endeavoring to compete with Montreal, which enjoys rate advantages both on imports and exports,

to Middle Western and Canadian territory, there may have been a national reason why Boston should have been placed in a position to compete with Montreal, even at the supposed injury of the American ports of Philadelphia and Baltimore.

The word supposed is used with some thought, as the writer does not concede that injury to these other ports would be appreciable in view of the more rapid rail service to Baltimore and Philadelphia, or even to New York, than to Boston, from the territory in which cargo for these ports largely originates, while Boston would compete in the Great Lakes and Canadian territory against a foreign port.

New York Is Secure

The attitude of New York seems to be that the increase in commerce through outports is an injury to New York, and that New York is losing its supremacy. This belief is frequently held in the face of the actual gain in the commerce of the port of New York because of the port's decreased relative percentage of the total foreign commerce of the nation. This complaint on the part of New York can hardly be justified. New York is not losing its supremacy, if, because measured in percentage of the total, less than 50 per cent of the nation's commerce goes through that gateway.

It seems obvious that as the interior of the United States develops, additional gateways must develop rather than continued effort to force most of the commerce through one gateway. A theater for 1000 people has one main door, a stadium for 100,000 people has many doors. A port that develops beyond a certain point of saturation shows diminishing returns in economy of operation. The effect of attempting to jam through the port of New York half of the commerce of the United States, in the end, must retard the growth of that commerce. This attempt to carry most of our commerce eggs in one port basket has inherently several grave dangers that might be listed:

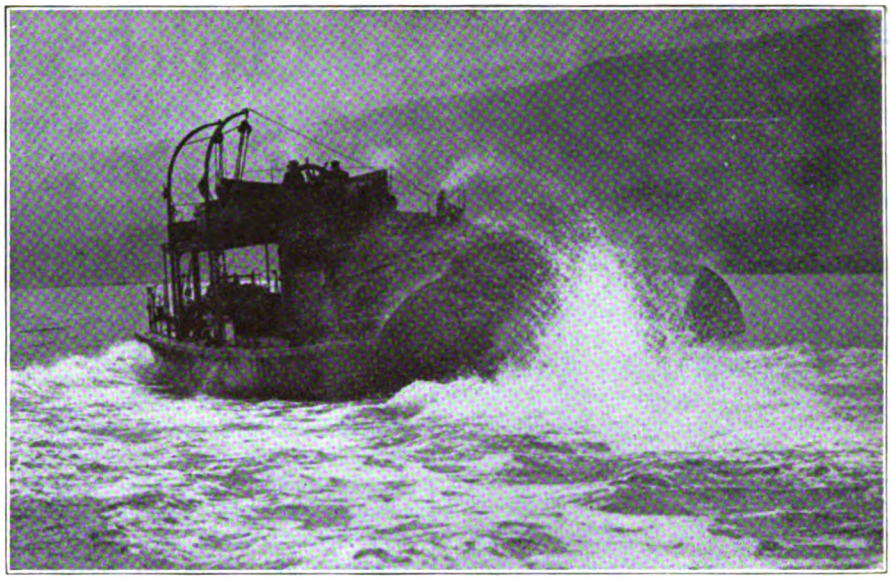
(a) The inevitable law of diminishing returns in an overgrown and congested port.

(b) The danger of tying up the commerce of the country through sudden and unforeseen obstructions such as longshoremen's strikes, epidemic and quarantine, fire, tornado, or earthquake, a sudden overload as in case of war; railroad strikes on lines serving the port, and other such interruptions.

In view of such possibilities, and, in particular, in view of the steady increase in national production, it is only sound business for the manufacturers and farmers of the interior to insist that other gateways be developed which will give them a choice in marketing their products under all emergencies. Unless a certain amount of freight passes through these outports sufficient in volume to afford efficient operation of modern facilities, these ports will not be developed at all, and no terminal facilities will be available in case of emergency. The outports must be kept in a position at least as active as the regular army and navy of the United States in peace times. Although the United States did not have a great standing army as a nucleus, it made possible the placing of three million trained soldiers in the field in less than a year when the emergency came.

The argument is made against the outport that dispersion of traffic will mean enormously expensive terminal facilities at many points along the coast which will run at half capacity and represent an overhead greater than the loss through congested but fully utilized terminal facilities at one or two great ports. The idea has been expressed that three fully equipped ports could serve the United States most efficiently—New York, New Orleans, and San Francisco. There is undoubtedly a certain amount of truth in this assertion, and the multiplication of outports should not be carried too far. A comparison between Europe and the United States should show that a reasonable number of outports, each serving its own distinct territory and at the same time acting as alternative gateways in competitive territory can be justified. Comparisons of commerce and population show that they will become absolutely essential to the economic life of the nation during the next 50 to 100 years, when the population of the United States will equal or exceed that of Europe. The per capita commerce of the United States is now far in excess of that of Europe so that, with a smaller population, our commerce is already as great.

Comparing Europe as a whole with the United States as a whole, the development of outports in the United States has only begun. Long before the population of the United States reaches that of Europe at the beginning of the World war in 1914, the population and commerce of this country will demand the efficient services of these outports as a necessity. It is undoubtedly time that every effort be made to encourage this development in order that we may not be caught unprepared.



VANE WHEEL METHOD OF SHIP PROPULSION

Developed in Scotland and especially suited for shallow drafts. Twin wheels are used. The experiment has met with some success

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CAPT. OTIS W. CLARK, Dorchester, Mass., for many years in command of sailing vessels, is now in charge of the American steamer QUINCY, one of the fleet of the Potter Transportation Co., New York. The QUINCY was formerly the German steamer VOGESEN and was seized by the United States government during the war.

B. N. Broido, who has been doing special consulting work for the Superheater Co., New York, has recently been appointed chief engineer of the industrial department of the company.

Captain Must Hold Alien Seamen

Master and Owner, Under New Immigration Law, Made Responsible for Ineligible Members of Crew

BY FRED B. PLETCHER

Associate Editor at Washington

SHIPMASTERS, charterers and owners of vessels under foreign flags, as well as under the American flag, have been faced with a most perplexing situation as to the probable effect of regulations for enforcing section 20—the so-called alien seamen provision—of the new immigration limitation law. The question as to just what extent shipping men will be made responsible for their crews while in American waters has been looked upon with some foreboding, especially in view of the fact that the majority of seamen on vessels touching United States ports are of foreign birth and citizenship.

Unfortunately, the question of the latitude to be given the foreign seaman in a United States port has been the subject of considerable misinterpretation, according to officials of the immigration bureau of the United States department of labor. Many vessel men, it is pointed out, had been given the impression that to meet strictly the requirements of the alien seamen provision it would be necessary for the shipmaster to put his foreign sailors under lock and key while in port.

Officials Promise Aid

On the other hand, immigration bureau officials emphasize that attempts will be made to avoid all such inconvenience to ship captains through the use of judicious discrimination in designating seamen in their crews who should be detained for deportation.

In commenting to MARINE REVIEW upon the views of the law held by shipping men, W. W. Husband, commissioner general of immigration, said: "Shipmasters need have no dread that any restriction of movement will be required of the foreign seaman or that ship captains will be subject to undue inconvenience, provided, of course, that the foreign seaman is a *bona fide* seaman. But he must be *bona fide* and not an immigrant using the seaman's guise as a wedge to get into the United States through other than the regular quota channels and thus evade the immigration restriction law.

"The intent of section 20 is to prevent aliens from making a side-door entrance into the country, and the immigration officials can give shipping men every assurance that by using the utmost discretion in picking their crews, inconvenience in handling the foreign seaman in the United States ports will be reduced to the minimum. It is the aim of the bureau to stem every possible flow of illegal immigration. Every precaution is to be taken that the seaman of foreign citizenship must not land in a United States port unless he is a *bona fide* sailor, and not a passenger who has worked his passage across to gain free entrance into the United States."

How New Law Will Be Interpreted

ENFORCEMENT of the new immigration law has introduced many new puzzles to government officials. Among these was the discovery that the law tries to put down an absolute barrier to the flow of seamen who have been entering this country, simply by walking off their ships. The new law makes the master, owner or charterer of the vessel responsible for all members of the crew who are ineligible. The law carries a sting since a $1000 fine for each person is imposed.

To those in the shipping business the law adds a brand new burden. Marine Review had its Washington editor take the question up directly with the immigration officials at Washington. This article, therefore, reflects the viewpoint of those who have the responsibility of interpreting and enforcing the new law. For that reason, it has an especial interest to everyone connected with the operation of ships, either American or foreign.

Evade Immigration Law

It is pointed out by labor department authorities that for several years the number of seamen who deserted ships when they reached American ports ran as high as 5000 to 6000 annually. Most of these men upon stepping out of their characters as seamen attempted to remain as employes in United States shore plants and to obtain American wages. Some, of course, since the quota law has been in effect, were detected, and were deported, if their national quota had been exhausted or they could not meet the quota regulations. In some cases, these seamen could have been admitted as regular immigrants, their national quotas not having been filled, but it is evident, of course, that many had signed as seamen to save passage money rather than to evade the immigration regulations.

Since the passage of the 3 per cent quota law in 1921, the number of foreigners desiring to sign up for seaman's service on vessels has shown an increase, according to reports coming to the department of labor. This is taken to mean, of course, that many of the applicants thus sought to evade the quota law. The majority of these applicants, on the other hand, were shown to be *bona fide* seamen. While some of them left their ships in American ports to reship on other vessels and lines, no objection to this course could be made by the immigration authorities.

Seamen Are Examined

In 1919 and part of 1920, when many foreign ships had to be laid up in ports, the number of seamen who entered the United States by way of these side-door routes was at the rate of about 20,000 yearly. Many crews were paid off and discharged in United States ports, and thus it became a comparatively easy matter for the erstwhile seamen to lose themselves as "American citizens." Foreign consuls at Baltimore, New York, Boston, Galveston and other ports incidentally were kept busy in trying to arrange passage back home for many of those stranded. In 1923, according to reports, it is estimated roughly that about 25,000 men left their ships in port in this country to obtain work elsewhere.

The alien seamen section of the immigration law stipulates that the owner, charterer, agent, consignee or master of vessels entering United States ports from foreign ports must hold their alien seamen on board until the immigration officer in charge of the port of arrival has made an inspection of these seamen. This examination consists of questions as to their time of service, their seamanship and their intent to follow this occupa-

How New Immigration Law Adds Burden to Vessel Owner and Master

SEC. 20. (a) The owner, charterer, agent, consignee, or master of any vessel arriving in the United States from any place outside thereof who fails to detain on board any alien seaman employed on such vessel until the immigration officer in charge at the port of arrival has inspected such seaman (which inspection in all cases shall include a personal physical examination by the medical examiners), or who fails to detain such seaman on board after such inspection or to deport such seaman if required by such immigration officer or the secretary of labor to do so, shall pay to the collector of customs of the customs district in which the port of arrival is located the sum of $1000 for each alien seaman in respect of whom such failure occurs. No vessel shall be granted clearance pending the determination of the liability to the payment of such fine, or while the fine remains unpaid, except that clearance may be granted prior to the determination of such question upon the deposit of a sum sufficient to cover such fine, or of a bond with sufficient surety to secure the payment thereof approved by the collector of customs.

(b) Proof that an alien seaman did not appear upon the outgoing manifest of the vessel on which he arrived in the United States from any place outside thereof, or that he was reported by the master of such vessel as a deserter, shall be prima facie evidence of a failure to detain or deport after requirement by the immigration officer or the secretary of labor.

(c) If the secretary of labor finds that deportation of the alien seaman on the vessel on which he arrived would cause undue hardship to such seaman he may cause him to be deported on another vessel at the expense of the vessel on which he arrived, and such vessel shall not be granted clearance until such expense has been paid or its payment guaranteed to the satisfaction of the secretary of labor.

(d) Section 32 of the immigration act of 1917 is repealed, but shall remain in force as to all vessels, their owners, agents, consignees, and masters, and as to all seamen, arriving in the United States prior to the enactment of this act.

tion, and it also includes a medical examination.

Should the immigration inspecting officer be uncertain about any of these sailors, he designates the latter to be detained on board while the vessel is in port. Failure of the shipmaster to detain the men designated for further examination and possible deportation subjects him to a fine of $1000 for each seaman not detained, the amount to be paid to the collector of customs of the customs district in which the port of arrival is located. Pending determination of the liability for the payment of such fine, or while the fine remains unpaid, no vessel shall be granted clearance unless a deposit of a sum is made which is sufficient to cover the fine, or a bond is submitted with sufficient surety to cover the payment, the surety to be approved by the collector of customs.

Proof that an alien seaman did not appear upon the outgoing manifest of the vessel on which he arrived in the United States, or that he was reported by the master of the vessel as a deserter, shall be *prima facie* evidence of a failure to detain or deport after requirement by the immigration officer or the secretary of labor.

If the secretary of labor finds that deportation of the alien seaman on the vessel upon which he arrived would cause the alien undue hardship, he may order him deported on another ship at the expense of the vessel on which he arrived, and the latter vessel shall not be granted clearance until the expense has been paid or its payment guaranteed by some sufficient bond or otherwise.

Section 32 of the immigration act of 1917 provided easy access by which the seaman could change his status from that of a sailor to an immigrant. He could leave the ship and apply for entrance papers by the payment of a head tax and could apply for citizenship papers in the same manner as an ordinary immigrant. This section, however, has been repealed in the new law, and remains in force only as to vessels, owners, agents, consignees and masters, and as to all seamen, arriving in the United States prior to the immigration law of 1924. Obviously, it would be impossible, under the present law, to gain legal entrance under any conditions without a vise obtained from consuls at the port of embarkation.

Officials Promise Co-operation

As pointed out by government officials, no vessel need be inconvenienced to any extent. Before the ship docks, the immigration officer boards the vessel, under the present regulations, lines up the crew and makes his examination. The immigration officer at the various ports learns to know the *bona fide* seaman, and against the latter there will be no restrictions. Should members of the crew be suspected as prospective immigrants under the guise of seamen, these will be ordered detained while the vessel is in port until a decision is made as to their deportation. The others of the crew are allowed their freedom in port without further scrutiny. They may even leave the ship and reship on another vessel.

Authorities of the department of labor point out that shipmasters in recruiting their crews can help minimize the number to be detained on board the vessel while in a United States port by exercising careful discrimination. American shipmasters recruiting their crews in foreign ports are subject to the same regulations.

Officials of the bureau of navigation, of the department of commerce, have cited numerous difficulties encountered by shipping commissioners in signing up American college students and others by foreign shipmasters in this country. Many are left stranded in foreign countries. Unless they take the precaution to establish their identity as American citizens through the customs offices, the American state department can not legally bring them back to this country at the expense of the United States government. Large numbers of this class of "seamen" have been stranded in foreign countries in the last few years.

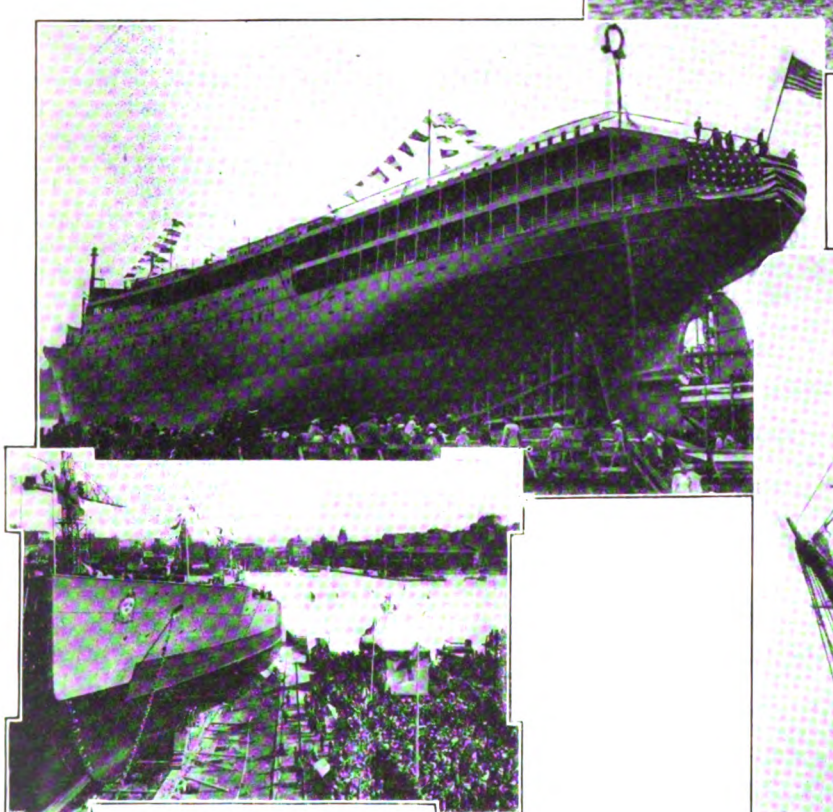
Section 20 of the 1924 immigration act is given in full in the accompanying box.

Great interest is being taken in the contract lately given out for building two ships to the order of Alfred Holt & Co., Ltd., Liverpool. The ships are to employ plates much thinner than usual, made of a steel invented by F. G. Martin, the chief metallurgist of the company. The steel has a much higher elastic limit than that commonly used, enabling the plates to be thinned considerably without any reduction of strength. This increasing lightness gives a larger proportion of horsepower for moving cargo.

Photographs from Far and Near

Whaling bark Wanderer, last of the famous New Bedford fleet of square riggers. Below she is shown tied up at the dock, outfitting for the first whaling voyage out of New Bedford in years. Two days after sailing, the West Indian hurricane which smashed the big transatlantic liners, tossed the bark a hopeless wreck (left) on the Cuttyhunk rocks, Buzzard's bay, Massachusetts. Her crew escaped in two whaleboats

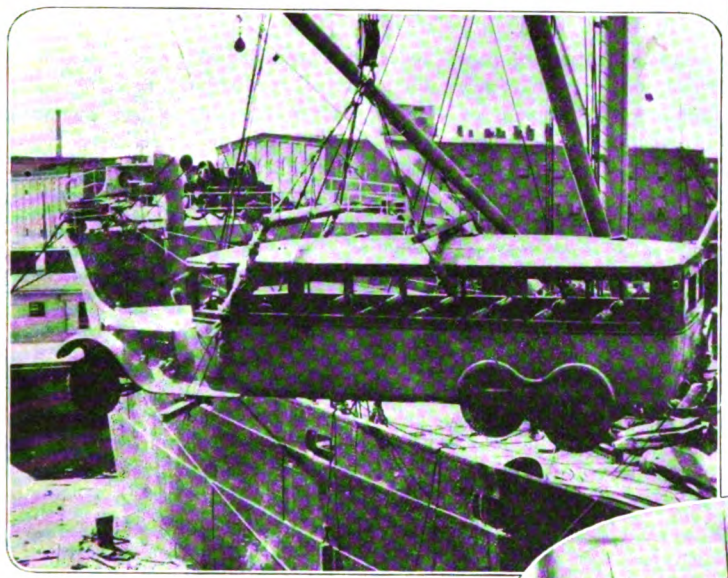
Great Lakes motor vessel Benson Ford upbound through the lakes with a cargo of coal. She is one of two built for the Ford Motor Co. to carry iron ore



A Swedish man-of-war taking the water at Gothenburg. She is the Drottning Victoria. Above is the new passenger liner Bienville just before launching at the Todd shipyard, Tacoma

Latest Marine News in Pictures

Loading a new style, 6-wheel American built motor coach into steamer at Philadelphia. No crating was used but the loading was handled without damage, although the hatch was barely large enough to pass the carriage through



Harbor scene at Los Angeles showing floating dock in service. In a few years this harbor has jumped to the front rank of American ports

Pere Marquette carferry No. 21 leaving Manitowoc, Wis., where her sister ship No. 22 will also go into commission soon. These ferries run across Lake Michigan and are included in the big Nickel Plate railroad consolidation

A contrast in docks. Above is a battery of huge iron ore unloaders at Cleveland. At left, loading equipment at Port Talbot, South Wales

How To Reduce Ship Accidents

Campaign of Education Necessary To Safeguard Men on Ships—Management and Officers Must Help

BY ROBERT F. HAND
Assistant Manager, Marine Department, Standard Oil Co., (N. J.)

WITH the development of the modern steamer and the gradual disappearance of the fine old wind jammers, an equally marked change has taken place in the type of men who follow the sea, as a means of earning their livelihood. Seamen in the not very distant past took such pride in their calling that even an indifferent ship was trim and taut from truck to keel, and it was a poor sailor indeed who could not handle himself sufficiently well to keep out of careless accidents. This type, however, is passing with the sailing vessel and the frequent recurrence of preventable accidents is conclusive proof of the fact. Many of those who call themselves sailors today—I am speaking now of the average seaman, rather than licensed personnel—would be far better adapted and eminently safer elsewhere. It thus not infrequently results that thoughtless and inexperienced men aboard ship endanger not only their own lives but the lives of the entire ship's company by careless handling of machinery or lines, or by performing in an unseamanlike manner, the various duties which are assigned to them.

Must Educate Men

It is true, of course, that the very development in steamship building, of which I speak, has brought with it many new hazards to replace those encountered in sailing vessels, and it is also true that the conduct of routine work incidental to the operation of steamships will continue to result in accidents, some of them unavoidable and of a nature peculiar to the sea. It is, nevertheless, apparent that the manifestly increasing need for intelligent safety supervision in our merchant marine is primarily due to the failure, and in many cases, inability on the part of the individual member of the crew to take care of himself, and on the part of his superior officer properly to provide for the safety of those under him, and that, therefore, the problem of greater safety becomes essentially an educational, rather than an administrative one.

Careful analysis of the nature of accidents to seafaring personnel, which occur with greatest frequency, has led me to this conclusion and a brief review of some of them will perhaps serve to illustrate my point to better advantage.

Undoubtedly a large percentage of personal injuries aboard ship results from falls, either on deck or below, many of which might be prevented by due precaution in the matter of rigging, gangways and pilot ladders, providing proper protection from open hatches, and in the installation of hand rails, foot guards, engine-room gratings and floor plates.

Next in importance from the standpoint of their numerical recurrence are accidents due to falling objects. Such casualties result in many instances from careless operation of cargo handling machinery and other hoisting gear, thoughtless handling of tools at elevated points without due regard for the safety of those below, and only too frequently from lack of supervision on the part of the officers in charge of such work.

Many engine room injuries, which occur with almost as great frequency as those in the preceding group are of a nature that might be avoided by timely and proper instruction of watch officers to inexperienced men on their watches, and the same may be said of a large proportion of burns and other boiler room casualties, which result from flare backs and similar causes through improper operation and dangerous practices in the fire room.

Few Unavoidable Accidents

As a matter of fact, when viewed from this standpoint, unavoidable accidents are relatively surprisingly few in number, for what has already been said of certain forms applies to almost all of the long list of casualties connected with the operation of steamships; thus, accidents caused by deck machinery may often be traced to the removal of guards or to an inexperienced operator; injuries sustained while handling mooring lines, to the lack of watchfulness on the part of the mate in charge; injuries to the eye while chipping or scraping, to the failure to provide or wear goggles; infection of minor wounds due to ignorance of the consequences thereof, or failure to administer aid or report promptly for first aid treatment.

There does not seem to be any doubt, therefore, that the question of practical safety supervision reduces itself primarily to one of educating both officers and men to the point where they think and automatically act in accordance with established safety principles, for safety regulations mean nothing if the safety thought is not implanted in the mind of the individual. This brings us logically to the important step of determining the most advantageous form or forms in which safety instruction may be brought to the attention of the seagoing personnel in a manner best calculated to accomplish its purpose. In the case of licensed officers, who, of course, are in a position to profit by a more direct and personal relationship with management, the problem is not such a difficult one, but the necessity of focusing the attention of all hands in the forecastle to the question under consideration still remains, and constitutes, in my opinion, by far the harder job of the two.

Channels for Safety Expression

In any event, however, the simplest and most readily available methods by which seagoing personnel may be reached for purposes of safety education are, to my mind, three in number, namely; personal instruction, accident bulletins and safety illustrations, and I feel that by the judicious handling of these three modes of expression, properly coordinated, much can be accomplished toward the elimination of preventable accidents. The last of these being obviously best suited to reach all members of the crew, permits of the use in a more restricted manner of the former two, provision of which, as a result, may be confined to licensed officers.

Referring, for the moment, to the need of personal instruction, I believe it is a mistake, for example, to place a complicated device such as a gas mask in a ship and expect the officers to guide themselves by printed instructions thereon in cases of emergency. Wherever the use of such a piece of gear is considered advisable, at least one and preferably several of the ship's officers, in addition to the master, should receive detailed instructions regarding its use from experts ashore, and there should be stipulated a fixed interval at which such apparatus should be thor-

Paper presented at the Louisville, Ky., meeting of the National Safety council, Sept. 29-Oct. 3.

oughly overhauled and an actual demonstration given of its operation by a qualified officer aboard ship. It is only by so doing that prompt and effective use can be made of such apparatus in times of emergency, when uncertainty and consequent loss of time on the part of the operator may mean the life of the victim.

Personal instruction in matters of this kind may be followed up to good advantage by safety bulletins containing accounts of specific accidents resulting in injuries to personnel, or setting forth in a convincing style the danger of performing in a manner which experience has shown to be hazardous, routine assignments incidental to the maintenance and operation of steamships.

Safety illustrations may be issued independently or in conjunction with safety bulletins as a means of providing additional emphasis for the latter. In either case, their preparation requires considerable study and care, together with a strict observation of detail, in order that they may accomplish their intended purpose with a maximum degree of effectiveness.

Illustrations Help

In the *Ship's Bulletin*, a publication which is issued to the seagoing personnel by the marine department of the Standard Oil Co., (N. J.), it has become the custom to run a safety illustration in every issue, and by close observation of the manner in which the men aboard the ship have reacted toward our efforts in this direction, we have been able to draw certain conclusions regarding factors in the general make-up of such posters, which we feel are best suited to maintain a high standard of effectiveness.

The essential factor in all such work is, of course, consideration of the mental characteristics and nature of the men for whose immediate benefit the posters are intended, and in the case of marine posters, this fundamental rule applies with peculiar force. Seamen, as a class, are of a discerning and critical nature in all matters which pertain to their vessel. The purpose of the safety poster aboard ship would, therefore, be immediately defeated and the poster itself rendered ridiculous in their eyes by the inclusion in the picture of some trifling irregularity or technical blunder which would be considered of minor consequence to the landman, but would surely appear a glaring error to the seaman.

Similarly actual photographs, rather than drawings, are now being used for safety illustrations in the bulletin, for the reason that the former, having been taken aboard ship, have a naturally realistic appearance which can not be duplicated.

It also appears desirable to contrast proper and improper operating methods on safety illustrations, that is, to present the right and wrong side of the question by picturing a particular source of danger as well as the correct operating conditions under which such danger might be avoided. This scheme has the added advantage of reducing in some cases the amount of printed matter required on the poster, it being highly desirable in any case to reduce the latter to the minimum necessary to convey the message in unmistakable manner.

I have dwelt at some length on the educational side of safety supervision, for the reason that it constitutes to my mind, by far, the most important phase of the problem. There still remains, however, the necessity of enforcing a few safety regulations governing the conduct of the seagoing personnel and certain operating matters.

Safety regulations such as those, for example, which provide for the use of goggles, proper gangways, guards for dangerous connections and moving parts of deck machinery, etc., are unquestionably essential, but I feel that their number should be reduced to a minimum and that nothing should be permitted to appear in them which it is not anticipated will be put into effect literally, for by enforcing few regulations to the letter, far better response is obtained than by laxly administering a greater number.

In line with this policy, I am of the opinion that all accidents to personnel of any nature and however trivial should be rigidly investigated as soon after their occurrence as possible, by authorized representatives of the management, and in a case where it is revealed that the casualty resulted from failure on the part of an individual to comply with an established safety regulation or to observe the common principles of ordinary precaution such individual should be dealt with summarily.

Shore Officers Can Help

The value of the service contributed to an industrial plant ashore by a regularly assigned safety engineer can not be questioned. It is doubtful, however, whether such individual would prove of practical value in the organization of a steamship operator, for it can readily be appreciated that a safety engineer trained ashore can not be qualified to pass upon marine hazards for the reason that the practice of operating on shipboard is dictated by peculiar conditions that can best be comprehended only by those who have had long practical experience at sea. Instead, however, it may be said that all members of a steamship company's shore establishment, concerned in the physical operation of the ship, should be thoroughly qualified to perform the duties usually accomplished by a safety engineer, that is, they should be on the alert constantly during the conduct of their business aboard the vessels to detect and remedy possible sources of danger. In furtherance of the efforts of the shore organization in this direction, both the master and chief engineer should be required to make frequent inspections of their respective departments, and they should be encouraged to report to the management all dangerous conditions in their vessel which are beyond the capacity of the ship's force to remedy.

Following up all such reports, and penalizing carelessness as outlined above, will undoubtedly be of assistance in reducing the number of preventable accidents, but I regard both of these factors of secondary importance to the fundamental essential of impressing upon all officers and men the necessity for exercising constant viligance to eliminate the danger of casualty. Safety aboard ship should be the primary consideration of all persons engaged in steamship operation.

British Give Aid To Help Shipbuilding

Under the ship construction loan provision of the Jones law, the shipping board has aided several American companies to finance new ship work. The following list from *Fairplay*, shows the sums guaranteed by the British government to British shipowners up to June 30 for new ships under the trade facilities act:

Silvercedar Shipping Co., Ltd., £85,000, 10 years, construction of two vessels at Sunderland.

A company to be formed by Petersen & Co., Ltd., £600,000, 10 years, construction of vessels on the Clyde.

Union Castle Steamship Co., Ltd., £400,000, 7 years, construction of vessel at Govan.

Grosvenor Navigation Co., Ltd., £75,000, 10 years, construction of vessel at Newcastle.

Bowring Steamship Co., Ltd., £37,500, 10 years, construction of vessel at Ardrossan.

Anchor Line (Henderson Bros.) Ltd., £1,600,000, 10 years, construction of three vessels at Govan.

Nisbet Shipping Co., Ltd., £27,500, 10 years, construction of vessel on the Clyde.

Dampskibsaktieselskapet Jeannette Skinner, £185,000, 10 years, construction of vessel at Glasgow.

Warren Line, Ltd., £150,000, 10 years, construction of vessel at Glasgow.

Lloyd Sabaudo, Genoa, £600,000, 10

years, construction of vessel at Dalmuir.

Manchester Liners, Ltd., £140,000, 10 years, construction of two vessels at Glasgow.

Houlder Line, Ltd., £150,000, 10 years, construction of vessel at Glasgow.

British & African Steam Navigation Co., £600,000, 5 years, purchase of plant, machinery, and materials in Great Britain for construction of vessels at Belfast.

Hopemount Shipping Co., Ltd., £150,000, 8 years, construction of vessels at Glasgow and Wallsend-on-Tyne.

Silvercedar Shipping Co., Ltd., £55,000, 8 years, construction of vessel at Glasgow.

Klaveness Dampskibsaktieslskab, £128,000, 5 years, purchase of plant, machinery, and materials in Great Britain for construction of vessels at Belfast.

Klaveness Dampskibsaktieselskab, £128,000, 8 years, construction of vessel at Glasgow.

Northern Petroleum Tank Steamship Co., Ltd., £72,500, 7 years, construction of vessel at Sunderland.

Navy Calls Scientists To Study Ocean

FOR a constructive survey leading to practical and profitable ends, and not for highly technical and involved academic discussions, a notable congress has been convened by the secretary of the navy in Washington. The congress is composed of experts from the various government departments and scientific institutions; men with authoritative knowledge of a wide and diversified character, public spirited enthusiasts in many aspects of knowledge, leaders in scientific research. They have been gathered together under the leadership of Secretary Wilbur to consider the proposed naval scientific expedition which it is hoped to organize for research work in oceanography.

The congress will determine in what way departments of the government, scientific institutions, colleges, and others may be benefited through such research work; what each of these may contribute toward such an expedition; what type of vessel and what scientific personnel is to be employed.

The congress was formally opened by Secretary Wilbur, who reviewed briefly his aims in calling the congress and stated in the course of his remarks that "this is the time in which the search for truth is the characteristic development, and in the oceans of the earth there are still unsounded depths and mysteries yet undiscovered. It is in the effort to co-ordinate the various resources here represented that you are asked to gather."

The recently developed sonic depth finder which furnishes a ready means of measuring the depths of the ocean with great rapidity using reflection of sound from the bottom instead of the cumbersome method of the wire, makes it possible now to determine the formation and shape of the ocean basins and promises to revolutionize investigations in oceanography.

Plant and animal resources of the oceans enormously exceed those of the land areas, not only because the water area forms five-sevenths of the total surface of the earth, but also because life in the oceans may be found in successive layers, one above the other, each layer having its own particular flora and fauna. The utilization of this enormous reservoir of food supply has hardly begun. Increased knowledge of these resources and the development of the means of making them available for human consumption, are now appreciated as necessary. The proposed research expedition of the navy promises far reaching, practical and profitable results.

CAPT. FREDERICK B. BASSETT
Hydrographer of the United States navy and newly elected president of the congress on research in oceanography

Capt. F. B. Bassett, hydrographer of the navy, has been elected permanent president of the congress and Lieut. Commander George E. Brandt, secretary-general. The following executive committee has been named and will hold frequent meetings until the business of the congress has been accomplished: Captain Bassett, *ex-officio* chairman; Lieut. Commander Brandt, *ex-officio* secretary; Capt. R. O. Crisp, U. S. coast guard; Lieut. Col. C. A. Seoane, signal corps, U S. army; Dr. George W. Littlehales, hydrographic engineer, hydrographic office; Dr. David White, senior geologist, U. S. geological survey; Dr. E. D. Ball, director of scientific work, department of agriculture; Dr. H. B. Bigelow, director of museum of comparative zoology, Harvard university, and member of scientific staff of the bureau of fisheries; Austin H. Clark, division of echinodermis, Smithsonian institution; Dr. William Bowie, committee on Pacific investigations of the division of foreign relations of the National Research council; Capt. J. P. Ault, chief of section of ocean work, department terrestrial magnetism, Carnegie Institution of Washington, and commander of the non-magnetic ship CARNEGIE.

Captain Bassett was born in Brooklyn, N. Y., Jan. 4, 1869, graduated from public schools and Polytechnic institute, Brooklyn, and from the naval academy, Annapolis, in 1888. He served in all parts of the world in all grades of the navy. He was on the U. S. S. MARIETTA in the Spanish war and commanded the U. S. S. UTAH in Irish waters in the World war. He always has taken an active interest in scientific work. He surveyed the harbors of Boston and Pensacola, Fla., and the coast of Maine in the U. S. S. BLAKE and conducted scientific researches off the coasts of Lower California for the hydrographic office in the U. S. S. THETIS. He was made hydrographer of the navy, Jan. 9, 1922.

Committees Push Efforts for Marine Standards

Efforts to develop standards which will enable American shipping to operate more efficiently, were advanced in September by a series of meetings in New York and Philadelphia of experts who have been devoting considerable study to the many items in which at present there is no uniformity. Four of the New York meetings were by subject committees, devoting their attention to a single phase of this huge undertaking, while the fifth was a gathering of the executive board of the American Marine Standards committee. The division of simplified practice, department of

commerce, is co-operating in the movement.

On Sept. 16, a subject committee on "Hose, Water, Fire, Steam and Oil" held its second meeting in the offices of the shipping board, New York, with A. G. Reed, assistant materials engineer of the Fleet corporation, presiding. In the afternoon, a subject committee on "Care and Operation of Oil Burning Apparatus and Handling of Fuel Oils" held its first meeting. C. J. Jefferson, head of the fuel conservation service of the Fleet corporation presided.

On Sept. 17, with James Kennedy, manager of the marine department of the Gulf Refining Co., presiding, a subject committee continued its studies of "Care and Operation of Lubricating Systems and Appliances, and Lubricants." The subject committee on "Operation of Ships" met in the offices of Robert F. Hand, of the marine department of the Standard Oil Co. of New Jersey, New York. This committee's work is to consider operation of a ship as a business institution, accounting for stores, personnel, documentary forms, inspection and tests of safety equipment, handling and care of passengers, cargoes and stores. On Sept. 19 a meeting was held in the Fleet corporation offices in Philadelphia of a subject committee on "Stanchions and Ladders." The chairman of this committee is W. R. Bean of the New York Shipbuilding Corp.

Plan New Chicago Industrial District

DECISION of the federal trade commission in opposing the Pittsburgh plus policy of establishing steel prices, is likely to have a strong influence in the development of the Lake Calumet harbor. This harbor is planned to handle the industrial needs of a great district south of Chicago. In the Calumet district alone, investments of more than $200,000,000 are already planned.

Lake Calumet lies wholly within the limits of the city of Chicago. Its area is 2144 acres, with an average depth of only 35 inches. Calumet river issues from it at 130th street, flowing northeast to Lake Michigan at 89th street. The plans for Lake Calumet harbor have been matured after more than a quarter of a century of scientific study and legislation. They call for the eventual creation of 1451 acres of new industrial lands, these surrounding a water area of 693 acres of uniform depth of 22 feet. This land-locked harbor is to have a main basin 1600 feet wide and two miles long. Twelve slips are planned extending east and west from the basin. The slips will be 450 feet wide and from 1050 to 3200 feet long, providing a water frontage of nearly 14 miles.

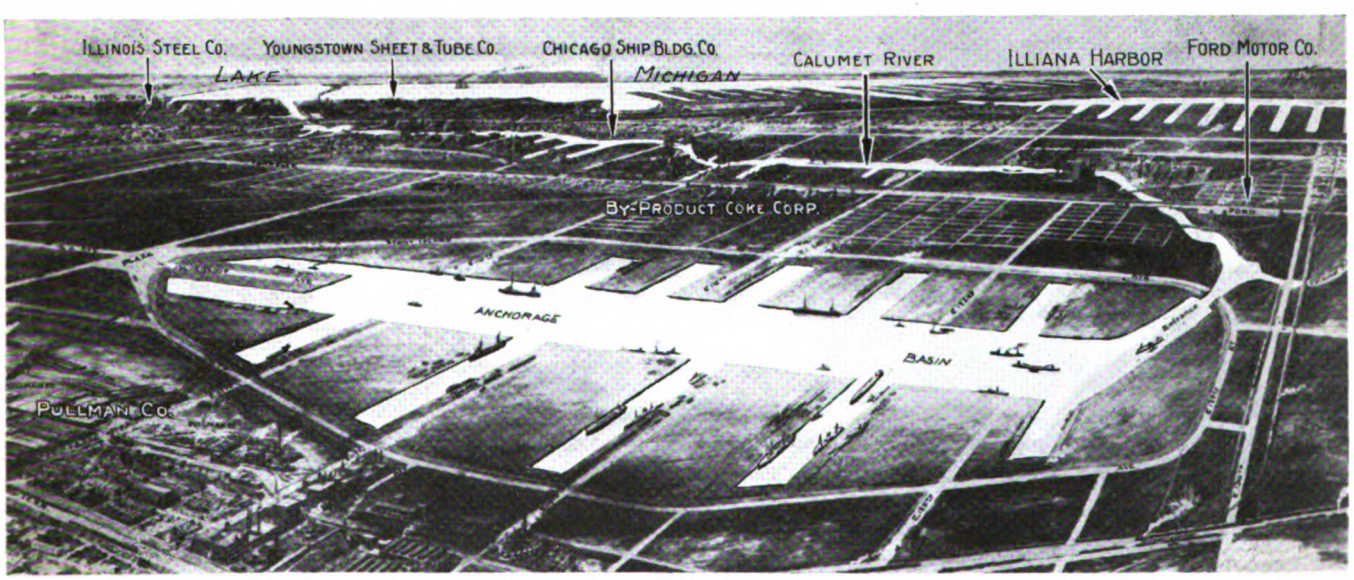
Here, according to the plans, will be dockage enough to handle, at one time, 150 of the largest bulk freight vessels on the Great Lakes. The soil dredged from the lake bottom in making the harbor will be used to raise the 1451 acres of industrial lands six feet above lake level.

Several months ago, the Nickel Plate railroad presented to the Chicago city council a definite proposal and plan to initiate the harbor work and complete a belt railroad and the first unit of the harbor without any cost to the city. This proposal has been referred to the committee on harbors, wharves and bridges, of which Alderman Guernsey is chairman.

One important provision in this proposal is that the railroad is to cede to the city its riparian rights and give the city certain strips for street extension work. In return the railroad is to get title to 55 acres of submerged land. The city is to convey to the railroad a 100-foot right of way encircling the lake for a belt line. This land the railroad is to fill to six feet above lake level. This belt line is to serve all industries on the harbor lands giving direct service to each of the 23 trunk lines entering Chicago. The Nickel Plate is to dredge a 200-foot public channel the whole length of Lake Calumet. At the north and south ends of this channel are to be turning basins 800 feet square. Entrance to this 2-mile anchorage basin is to be by way of a 100-foot bridge gateway from the Calumet river.

The Calumet river has been dredged by the federal government from Lake Michigan to the turning basin near Lake Calumet, at which point the city's work starts. By river, the distance from lake to lake is six miles. Many large industries line the river and nearly the whole of both its banks is in use by industries or is held by them for future growth. This harbor will have access to the Illinois waterway, by way of the Calumet Sag channel and the Sanitary canal.

This is a vast project of the greatest value in the development of a large, new industrial district, a project on which actual work can be started when the word is given by the Chicago city council.



HOW CHICAGO PLANS TO DEVELOP BIG TERMINAL DISTRICT AROUND LAKE CALUMET

Board Aids Training of Student Engineers

Student engineers may be carried on shipping board vessels under an order issued recently by the operating

department of the Fleet corporation: This provides (1.)—Students in engineering may be carried on vessels if there are living quarters available. Such students will be signed on as cadet engineers at the nominal rate of 25 cents a month and will mess with engineer officers. (2.)—Applicants for positions as cadet engineers must have certificates from the authorities (preferably the presidents) of the institutions they are attending, stating that they are *bona fide* students and that there is an educational benefit directly connected with their technical courses to be obtained from practical experience in the engine rooms of vessels. (3.)—While applications will be transmitted by district directors to the operating department at Washingon for approval, advance authority may be obtained by wire or telephone. (4.) In the interest of students, consideration is to be given to the length of voyages in relation to the dates they must be back for their studies. (5.)—The intent of this order is to afford those pursuing technical courses in engineering, opportunity to obtain the benefits of practical experience. It is not the intent to make cadet engineers a permanent rating for service on ships.

Engineers Improve Floating Drydock

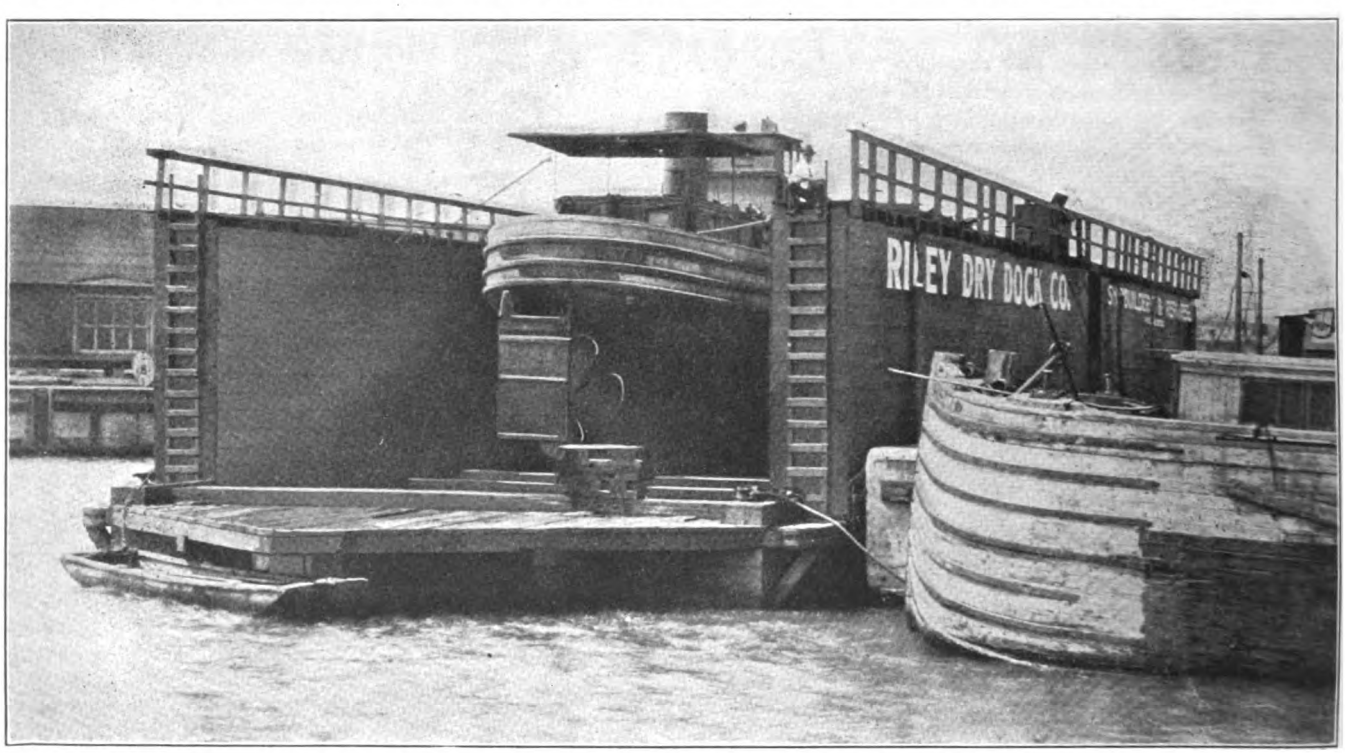
GREATLY increasing use of floating drydocks, especially in inland harbors where the smaller type of vessels is more in evidence, results from the improved mechanical construction of the docks and of the equipment installed. At one time the floating dock was in some disfavor because of lack of proper mechanical means to insure efficient and dependable service. At the same time, this type of dock has been the subject of extensive experiment because of the realization that this equipment offers one of the best assurances of a small initial outlay combined with minimum maintenance charges. The growing use of the floating dock is no better exemplified, perhaps, than in the world's greatest harbor—New York. This type is aided by the increasing value of river frontage. Floating docks are now in operation in New York harbor, for instance, which are capable of lifting large ships in 20 minutes.

The component mechanical parts of the modern floating drydock consist of the water tanks for lowering and raising the vessel, the pumps for emptying and filling these tanks and the unit of motive power employed for operating the pumps. It is the smaller docks, rather than the few large ones, which best bring out the mechanical features common to the up-to-date floating dock. Typical of the large number of smaller docks, is the new floating dock of the Riley Drydock Co., Buffalo, which has been in service for the past year.

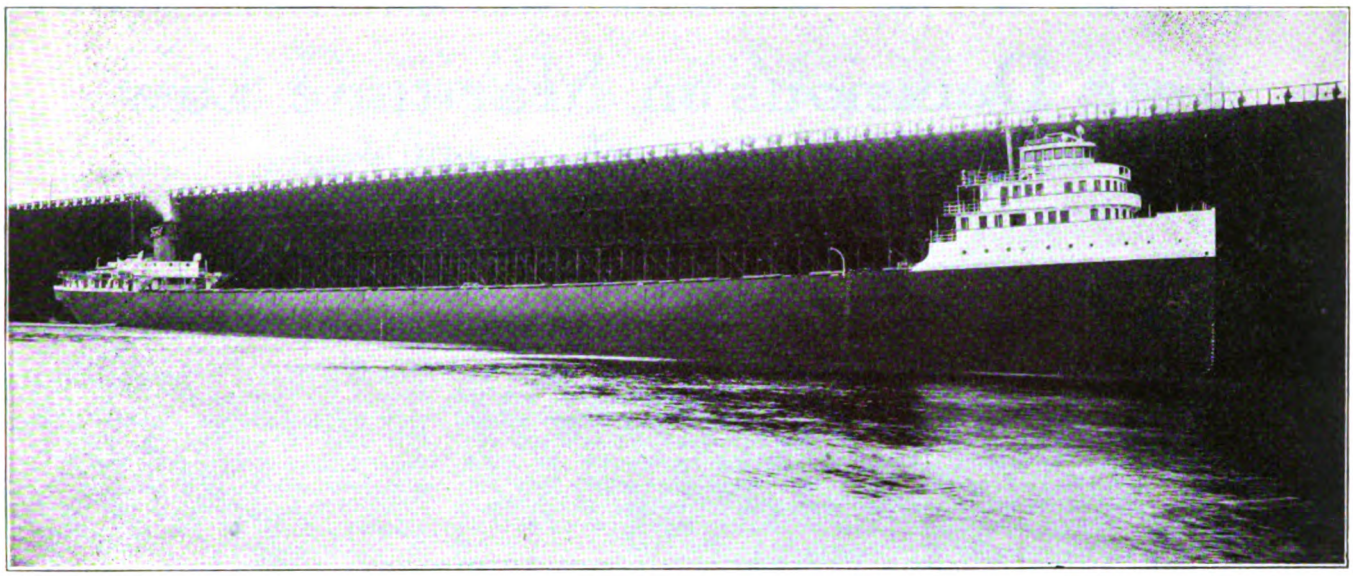
The overall dimensions of this dock are 150 feet in length by 42 feet in width. The hull was formerly used as a freight car ferry on the Hudson river. Two so-called towers or bulkheads, one on each side, running the full length of the dock, constitute the housing for the pumps and also contain auxiliary water tanks. These towers are 16 feet in height. The draft of the dock itself is nine feet.

The six water compartments, made of 4-inch pine, are each 21 x 50 feet. They are built under the main deck. The arrangement of these compartments is such that the three on one side are in parallel with those on the other side, while a bulkhead running the entire length of the dock constitutes the dividing line for each side. The series of three tanks on either side are connected by a system of piping by which each tank may be filled separately or in unison with the other two. Each one of the six compartments may be individually controled by a hand valve from the top of the tower.

The equipment for pumping the water in and out of these tanks consists of two 8-inch submerged vertical pumps made by the Buffalo Steam Pump Co., Buffalo, each driven by a 30 horsepower Westinghouse type vertical motor. Each pump serves three



FLOATING DRYDOCK IN SERVICE AT BUFFALO



NEW MOTOR VESSEL BUILT FOR FORD MOTOR CO.

Oil engine driven freighter HENRY FORD II loading her first cargo of Iron ore. With her sister ship BENSON FORD, she carries coal northbound and iron ore south to the Ford blast furnaces at River Rouge, Mich.

tanks and has a capacity of 3500 gallons per minute when operating at 720 revolutions per minute against a static head of 20 feet. The pumps are set in the bottom of the dock and are raised about 2 feet off the floor. Discharge is under water for all the tanks, a flap type of check valve being supplied so that the water can not back up into the pump. The two motors are direct-connected by a 20-foot shaft and are equipped with hand starters. Suction and discharge openings on these two pumps are 10 inches in diameter.

The maximum deadweight lift of this floating dock is estimated at 500 tons. The total amount of water to be pumped out of the dock within the time specified, is equal to the deadweight of the ship being lifted plus sufficient water which was used to overcome the buoyancy of the dock in order to sink it. Estimating that the buoyancy will require 1½ times the actual weight of the ship being lifted, 500 tons, this means a total of 1250 tons of water to be handled in 60 or 70 minutes.

The static head in a floating dock is changing constantly during the pumping operation. It is generally estimated by the mean or average head at which the average capacity must be pumped. The static head in a problem of this kind will be represented by the difference in the water level in the pontoon and the water level outside the dock. It is found that in all cases, the mean static head will be approximately two-thirds of the maximum static head, which in this particular case, after adding 4 feet for pipe friction, is 20 feet.

Particular attention must be given in the average floating dock to having the pump primed at all times, and under all conditions. This is done by having a foot valve on the suction pipe of the center compartment.

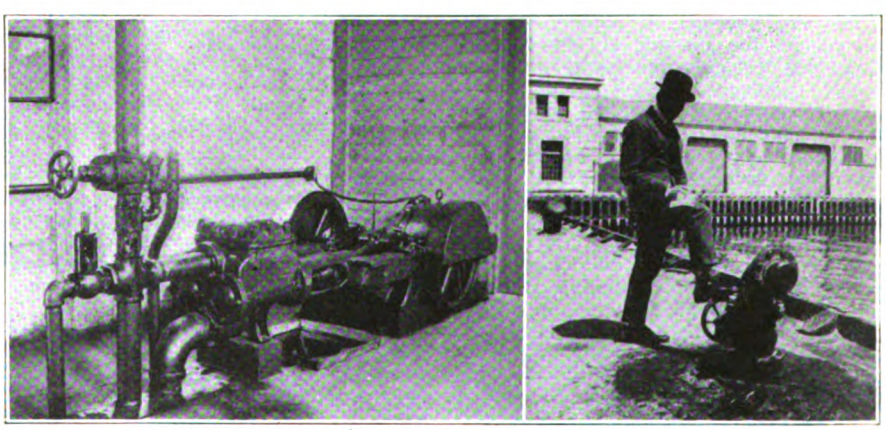
Comparison of the floating dock of today with those of but a decade ago, however, reveals the tremendous strides made in the direction of larger, more dependable and generally more efficient units.

Frisco Harbor Board Has Oil Storage Tank

The state harbor board operates a fleet of tugs, pile drivers, and dredgers in repairing and maintaining the harbor at San Francisco. All of these are oil burners. In order to provide a large storage capacity for the oil used by this equipment, a subterranean oil storage tank has been built just back of the Embarcadero about 200 feet from the bay. A large pipe extends from the oil tank to the bulkhead. Oil for the storage tank is delivered to this point in barges by the oil company and pumped through the pipe to the concrete storage tank.

Over the subterranean oil tank is an electrically operated oil pump which draws oil from the tanks of the barge into the concrete storage tank or delivers oil from the storage tank to the bulkhead. Here the oil supplies the barge maintained by the harbor board to deliver fuel oil to its dredgers, pile drivers and tugs. This oil barge is brought up to the bulkhead and connection made with the valve by means of flexible hose. The oil pump is then started, which quickly delivers the oil into the tanks on the barge.

This barge then is towed to the pile driver or dredger and by means of a flexible hose, connection is made with the tank aboard the vessel to be fueled. A duplex pump is on the oil barge, and this is connected to the steam boiler of the dredger or pile driver, by means of a hose, the steam from the boiler serving to operate the duplex pump.



OIL PUMP AND DELIVERY VALVE FOR SUPPLYING OIL TO VESSELS ON SAN FRANCISCO BAY

Late Decisions in Maritime Law

Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review
By Harry Bowne Skillman
Attorney at Law

UNDER charter parties requiring the charterer to pay demurrage after the expiration of the loading time agreed on and fixing lay days as commencing from the time the captain reports himself ready to receive or discharge cargo, the commencement of the lay days is at the expiration of such period after the service of notice or arrival by the master as the ship would require in the exercise of due diligence to haul to her wharf or pier, if the same were then provided.—United States v. F. S. Royster Guano Co., 288 *Federal Reporter* 92.

* * *

The fact that a part owner of a vessel liable for collision is also owner of other vessels does not increase his personal liability, which is limited to the same proportion of the damages that he owns in the vessel.—James McWilliams Towing Line v. Shaw, 288 *Federal Reporter* 74.

* * *

The measure of damages recoverable by the owner of a cargo of sand lost in collision is its market value, regardless of the price which he was to receive for it under a contract.—LITHOPOLIS, 288 *Federal Reporter* 86.

* * *

It is not essential to the existence of an admiralty lien that it be created by statute, it was said in the case of IMPERATOR, 288 *Federal Reporter* 372. Both by English and American law, a maritime lien exists in favor of a seaman for indemnity for an injury suffered through unseaworthiness of the vessel.

* * *

A vessel and owner are liable for damages resulting from negligent failure to so stow cargo as to protect it from injury by the ordinary contingencies of the voyage; that a cargo was stowed and dunnaged in a customary manner will not relieve the carrier from liability for damage; if under the circumstances the manner of stowing and dunnaging adopted was faulty and negligent. Though damage to cargo results from a cause excepted in the bill of lading, the carrier is liable if it would have been prevented by the exercise of proper care and skill.—United States v. M. Levy's Sons, 288 *Federal Reporter* 544.

* * *

In the case of ETNA, 288 *Federal Reporter* 576, it appears that while respondent vessel, loaded with grain, was lying tied to a pier, both pier and vessel took fire from a very destructive fire on shore, that a city fire boat was lying across the slip but was not manned, and that one of the libelants, who was not a member of the fire department, collected volunteers to man the boat which rendered effective service in saving the cargo of respondent vessel. The court held that the fire boat was the instrument used, and was in part manned by firemen or others under duty to render service, did not deprive the volunteers who were not under such duty of the right to salvage compensation.

* * *

Where a towing company was engaged by the owner of a steamship to move that vessel out of a slip, and such company took charge of the ship and proceeded to maneuver it under its own power, its officers and crew simply carrying out the instructions given them, the object of maneuvering the ship being to get it in a position where the tugs could come in contact, the towing company and not the steamship was liable for a collision occurring during such maneuvering.—HELEN, 288 *Federal Reporter* 935.

* * *

"The essential elements of all maritime liens include the necessity for the repairs, supplies, or advances and their actual use and benefit received by the vessel," it was held in the case of ANNA R. HEIDRITTER, 289 *Federal Reporter* 112, and it is not the law that, if the lender to the captain of a vessel acts in good faith and properly satisfies himself that the loan is necessary for the vessel, he need go no further, but would have a lien, even if the captain squanders the money. Shipbrokers, it was further decreed, were entitled to liens for navigation fees, inward pilotage, and telephone calls paid on the credit of a vessel.

* * *

"Pilots are bound to exercise ordinary skill and care according to the rules of navigation," said the court in the case of Transportes Maritimos De Stados v. Rotch, 289 *Federal Reporter* 115. Applying this rule, it was held that the stranding of a foreign steamship, entering a harbor for the first time, was due to the negligence of the pilot in charge, who, though uncertain as to the channel, kept on at full speed until in the shoals, when he could have determined his proper course from shore ranges.

* * *

In the case of CHARLOTTE W. MILLER, 289 *Federal Reporter* 816, it was decided that where a government submarine collided with a sailing schooner on Long Island sound on a clear day in attempting to closely shave by the schooner's stern, depending on the speed of the schooner to carry her clear, the submarine was at fault. In reaching the conclusion, the court said: "Close shaving of another vessel is always to be avoided. The risk of collision is to be avoided by leaving a good fairway for the other vessel. A vessel which, by belated attempts to obey the rules, unnecessarily creates a situation of great danger, can not expect to be excused upon the ground that when she changed her wheel it was still possible, by a smart maneuver, to get by, though with a narrow margin. It is her duty to give a safe margin, and not to put the other vessel in doubt of the competency of her management."

* * *

Act of congress of June 5, 1920, sec. 33, amending act of March 4, 1915, sec. 20, providing that a seaman suffering injuries in the course of his employment may at his election maintain an action for damages at law, with the right of trial by jury, is not in contravention of sec. 2, Art. 3, constitution of the United States, as invading the constitutional admiralty and maritime jurisdiction of the federal courts, it was decided in the case of Panama Railroad Co. v. Johnson, 44 *Supreme Court Reporter* 391, where the court said also that "there are boundaries to the maritime law and admiralty jurisdiction which inhere in those subjects and can not be altered by legislation, as by excluding a thing falling clearly within them or including a thing falling clearly without. Another is that the spirit and purpose of the constitutional provision require that the enactments—when not relating to matters whose existence or influence is confined to a more restricted field—shall be coextensive with and operate uniformly in the whole of the United States."

* * *

Where a vessel, which was moored while being repaired after an explosion under a contract requiring repairs to be completed on a stated date, was injured by a moving vessel, and the contract for repairing the injuries resulting from the collision was given to the same contractor, who completed his work under both contracts at the same time, 10 days after the date fixed in the original contract, evidence, it was held in the case of NORDANGER, 290 *Federal Reporter* 945, did not show that the delay in completing the original repairs resulted from the collision, and, therefore, did not render the colliding vessel liable for the 10 days' delay.

* * *

It was held in the case of Ienetti v. Joseph Intall & Co., 290 *Federal Reporter* 953, that where a rope, furnished for the use of stevedores in loading, was shown to be new and strong, the fact that it became kinked and, failing to pass through a block, parted under the strain, does not establish, nor raise a presumption of, negligence of either the ship, which furnished it, or the master stevedore, who used it, which renders them liable for injury to a stevedore caused thereby.

Late Decisions in Maritime Law

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IN THE case of ALABAMA, 288 *Federal Reporter* 170, it was held that an award to a salving vessel was excessive, to the extent that it included cost of repairing an injury which was not discovered until more than five months after the service was rendered, and which was not shown by satisfactory evidence to have been received in performance of such service.

* * *

The stowage of barrels of olives by piling them bilge and bilge, when they should have been turned bilge and cantline, was improper, it was said in the case of ORION, 290 *Federal Reporter* 379, and imposed liability where injury resulted therefrom.

* * *

"It is the duty of a fireboat to proceed as promptly and as speedily as possible to such part of the waterfront as the situation may require," said the court in the case of Texas Co. v. City of New York, 290 *Federal Reporter* 382. "Speed is, of course, vital, and particularly so in the waters along the New York City waterfront, where there are many slips, docks, piers, sheds, warehouses, and the like. Along this waterfront are frequently cargoes and contents of a highly combustible character, and it is a matter of common knowledge that some of the fires most destructive both of life and property, have occurred along the waterfront. In these circumstances, a fireboat can not, of course, be reckless and regardless of prudent methods of approach and navigation, but the emergency of fire and the consequent necessity of speed are elements to be considered. * * * It may happen, therefore, that contact with another craft which would not be excusable under ordinary circumstances may be excusable in the case of a fireboat, in the light of the maneuver, its execution, and the speed required because of the fire danger. It is never possible to lay down a rule of accuracy or definiteness when dealing with negligence. Whether there is negligence is a question of fact, determined in each case, of course, in the light of the applicable principles of law. A fireboat, in some circumstances, might be guilty of negligence, and in other circumstances might be without fault. The test must be found in the facts and circumstances of the particular case under consideration."

* * *

Where libelant's barge being towed up a harbor channel 600 to 800 feet in width, and in midchannel to get the benefit of the tide, was collided with after an exchange of signals of one whistle by a car float on the side of the steam tug libeled coming in to the channel from another channel, which steam tug, notwithstanding its duty under rule 19 of the steering and sailing rules to keep out of the way of libelant's barge, did not slow down, but continued its course, calculating erroneously that libelant's barge would be cleared, the libeled steam tug was solely at fault, it was determined in the case of TRANSFER No. 11, 290 *Federal Reporter* 391; rule 25 of the steering and sailing rules, as to keeping to the starboard side of a channel, not applying, as the vessels were not passing in a narrow channel.

* * *

Where a vessel, after backing out of her dock, was carried down harbor by strong north wind and ebb tide, and the impossibility of letting go her port anchor made it impossible to control her, she was thereby rendered unseaworthy, and this was the cause of her collision with a barge moored at the end of a dock, so that the vessel was solely to blame, it was decided in the case of WIRELESS No. 1, 290 *Federal Reporter* 239. It was also held in this case that where the undocking of a vessel was under arrangement whereby the master of one of the tugs became the servant of the vessel, and the tugs became subject to his orders as the servant of the owner of the vessel, and the tugs faithfully obeyed all such orders, and had cast off lines at the time of collision, they were free from blame, and the owners of the tug, whose master was in charge of the undocking, being exempt from liability for his acts on the vessel, such tug was exempt.

* * *

Two tugs were held in fault, in the case of CRESCENT, 290 *Federal Reporter* 245, for a collision between their tows when meeting and passing port to port in Arthur Kill in the daytime, the one southbound, with six light barges in tow in three tiers, which under the influence of the tide and a strong west wind, were sagging to port, for accepting a signal to pass port to port, or for not keeping her tow to the starboard side of the channel, and the northbound tug, with three heavy barges tandem, for giving such signal, or for not stopping when her master saw that the tow of the other tug had swung far to port, creating danger of collision. The court also decided that a helping tug, made fast to another tug, by which her movements were guided, was not chargeable with fault for a collision between the tow and that of a meeting tug, to which the fault of the leading tug contributed.

* * *

Under the ship mortgage act of June 5, 1920, sec. 30, subsec. R, a furnisher of repairs to a vessel on the order of one known by him to be the charterer of a character which under the charter party the charterer was required to pay for, is not entitled to a lien, where he made no inquiry and by the exercise of reasonable diligence could have ascertained the terms of the charter party—THORDIS, 290 *Federal Reporter* 255.

* * *

The evidence in the case of ORION, 290 *Federal Reporter* 379, was held sufficient to warrant a finding of improper stowage, where casks and barrels of olives were stowed in such manner that the weight of the cargo thereafter loaded was such as to break the staves of some of the casks and loosen some of the barrel hoops, causing consequent damage to the shipment.

* * *

Where a steamship was stranded and so injured as to be unable to complete her voyage, she was "lost or wrecked," within the meaning of section 4526 of the revised statutes of the United States, as amended, and her seamen, discharged for that reason, were entitled to wages only to the termination of their service. Where such seamen were paid their wages up until the time of the termination of the service and were furnished transportation on another ship to a home port, they were not entitled to wages for duty required of them on the home bound vessel.—QUAKER CITY, 290 *Federal Reporter* 409.

* * *

A steam lighter in East river, running in excess of the eight miles an hour speed allowed by section 757 of the New York City consolidation act, was at fault as respects a collision where she changed her course by heading in sharply toward shore, taking a course which could carry her across the bow of the tug collided with, which was close to shore, with the object of making a landing at a pier nearby; the word "speed," as used in such section, means speed over the ground, and includes the tide.—TERMINAL, 290 *Federal Reporter* 533.

* * *

A vessel under a time charter to the United States during the war, and engaged at the time of collision in carrying fuel oil for the British government to aid it in prosecuting the war, was not employed solely as a "merchant vessel," and, therefore, was not subject to a lien for damages resulting from the collision, which could be enforced against it after its return to the owners.—NORMAN BRIDGE, 290 *Federal Reporter* 575.

* * *

In a proceeding under section 4283, revised statutes of the United States, to limit liability, by the owner of a tug whose boiler blew up, the explosion destroying all evidence of its cause, it was held by the court (RAMBLER, 290 *Federal Reporter* 791) that the fact of explosion warranted the inference that the boiler was mismanaged, under the rule of *res ipsa loquitur*.

What the British Are Doing

Short Surveys of Important Activities in Maritime Centers of Island Empire

SHIPBUILDERS on the Clyde consider that the August returns indicate steady progress toward better business. The tonnage launched consisted of 15 vessels totaling 48,683 tons. This was the third highest total of the year. A more important figure is that for the eight months, vessels launched numbered 148, with a tonnage of 330,885. This compares with 72 vessels and 148,276 tons in the corresponding period of last year.

This is decidedly the best record since 1920 when ships launched were 440,174 tons. Prospects are not quite so good, new orders not equalling those in process of completion and recent additions to the cost of production have led to the turning down of attractive business. A peculiar feature is the shortage of shipyard joiners owing to so many workmen having gone into the house building trade and this lack of labor has occasionally delayed the completion of ships.

* * *

AT THE annual meeting of the Anchor Line, Sir Thomas Royden said that the drastic restriction on immigration to the United States was reflected in the greatly depleted earnings of the leading Atlantic passenger line. Emigration from Italy had been even more seriously affected than from Great Britain, and the prospect in regard to Italy was still more discouraging because of the control of emigration by the Italian government.

* * *

NEW Cunard twin-screw steamship AURANIA, built by Swan, Hunter & Wigham Richardson, Ltd., left the Tyne Sept. 6, after successful trials, for Liverpool to enter service. She is the eleventh ship built by Swan, Hunter & Wigham Richardson, Ltd., for the Cunard Steam Ship Co., Ltd., and the third of the same name, the second AURANIA having been lost in the Great war. The new ship was built on the same huge glass-roofed berth at Wallsend shipyard as that from which the MAURETANIA was launched about 17 years ago.

The 16-knot AURANIA, with accommodation for 1568 passengers including 434 cabin, is what is known as an intermediate Atlantic liner of the shelter deck type, her gross tonnage being about 15,000 as compared with the 31,000 tonnage of the MAURETANIA. She is of the latest and highest type of passenger steamship embodying many years of experience and skill in the design of ocean liners. The public rooms for cabin passengers immediately beneath the boat deck comprise a lounge, a long veranda gallery, a drawing room, a smoking room, a gymnasium, and a children's room. The cabin dining saloon seats 286 passengers at a time. For third-class passengers there are three public rooms, and two dining rooms seating 449 persons at a time.

Her leading dimensions are 538 feet in overall length, breadth of 65 feet, and molded depth of 43 feet to the shelter deck. The propelling machinery and boilers, which burn oil or coal, have been built by the Wallsend Slipway & Engineering Co., Ltd., and there are two sets of Parson's steam turbines with double reduction gearing designed to drive the ship at a speed of 16 knots. The oil burning installation is on the Wallsend-Howden system.

* * *

A LARGE new dock is to be built on the Mersey for Lever Bros. Ltd. The buildings and railway sidings will cover an area of 165 acres, the dock itself to be of 28 acres with a lock at the entrance 230 feet long and 70 feet wide. The necessary buildings, plant and machinery will bring the total cost up to £1,000,000 and the work is expected to occupy three years.

* * *

CURIOUS developments indicating the pugnacious attitude of British labor, are reported from Cardiff. The men heard that a vessel under repair was leaving for a continental shipyard. They immediately refused to replace the bottom plates unless the whole of the repair work was done at the port. To this the firm in charge of the ship agreed, and the whole of the overhauling was accordingly done at Cardiff.

* * *

DEPARTMENTAL committees have been considering the possibility of reducing the serious number of shipyard accidents. They say that the number can be reduced if the worker can be persuaded to regard his own safety and that of his fellows as the primary consideration. After examining various methods adopted in other industries, including the appointment of a committee comprising employers and employes' to investigate accidents with a view to their prevention, and the exhibition of posters warning the men against danger the committees recommend the appointment in every yard of a person or persons to exercise supervision with regard to the general safe conduct of the work. In view of the larger proportion of accidents to workers below 18 years of age, special supervision by experienced workmen of these youthful workers is advised.

* * *

ERRATIC behavior of the compasses of vessels passing a certain spot in the Mersey has led to the conclusion that somewhere on the sea bottom is some iron object, a mine, cable or a chain which through lying north and south has become magnetized. The sea bottom is being examined with a view to discovering the object.

* * *

THE Australian Commonwealth government is reported to be considering a scheme for establishing a fortnightly fast steamer service between Australia and England. The plan provides for a capital of nine millions, of which eight millions is to be spent in building six vessels. These, it is provided, will be built in Great Britain. They would be 650 feet long, 83 feet beam and of 20,000 gross tonnage. All the cargo space is intended to be refrigerated for the conveyance of chilled and frozen meat, butter, fruit and other produce. The arrangements include the speeding up of transit from 31 to 22 days, and the improvement in the quality of the meat and other edibles delivered is expected to stimulate this industry.

* * *

AFTER a good deal of colonial discussion, the Australian government has decided to invite British tenders for building two 10,000-ton cruisers for Australia in addition to those invited from the colonial dockyards. The reason assigned is the impossibility otherwise of obtaining a reliable estimate as to the cost. Sir John Monash in a special report prepared for the government stated that the cost of building a cruiser in Australia is roundly £1,000,000 more than the cost of purchasing a cruiser from a British dockyard and having it delivered in Australia.

Launch Lake Vessel from English Yard

A single screw steamer, the RAHANE, specially designed for service on the Canadian lakes, canals and St. Lawrence river was launched by Swan, Hunter, & Wigham Richardson, Ltd., from their Wallsend, England, yard recently. The principal dimensions are 248 feet in length between perpendiculars, 43 feet in width, with a molded depth of 25 feet and a forecastle 42 feet long. Water ballast will be carried in the forward and after peaks and in the double bottom fore and aft.

Five cargo hatchways are provided. Electric lighting will be installed throughout the ship and steam heating in all living accommodation. The engineers, oilers and firemen will be housed aft in a steel deckhouse on either side of the engine and boiler casings and the captain, officers and seamen in the fore end of the ship.

The engines, driving a single propeller, will be placed at the after end of the ship. Steam will be supplied from two single ended boilers. The machinery and boilers are being built by the North Eastern Marine Engineering Co. Ltd., Wallsend on Tyne.

New Ship Orders

The Bath Iron Works, Inc., Bath, Me., has been awarded the contract for constructing a passenger steamer for the New Bedford, Marthas Vineyard & Nantucket Steamboat Co. The steamer will be 210 feet long and have a carrying capacity of 2000 passengers and 100 tons of freight.

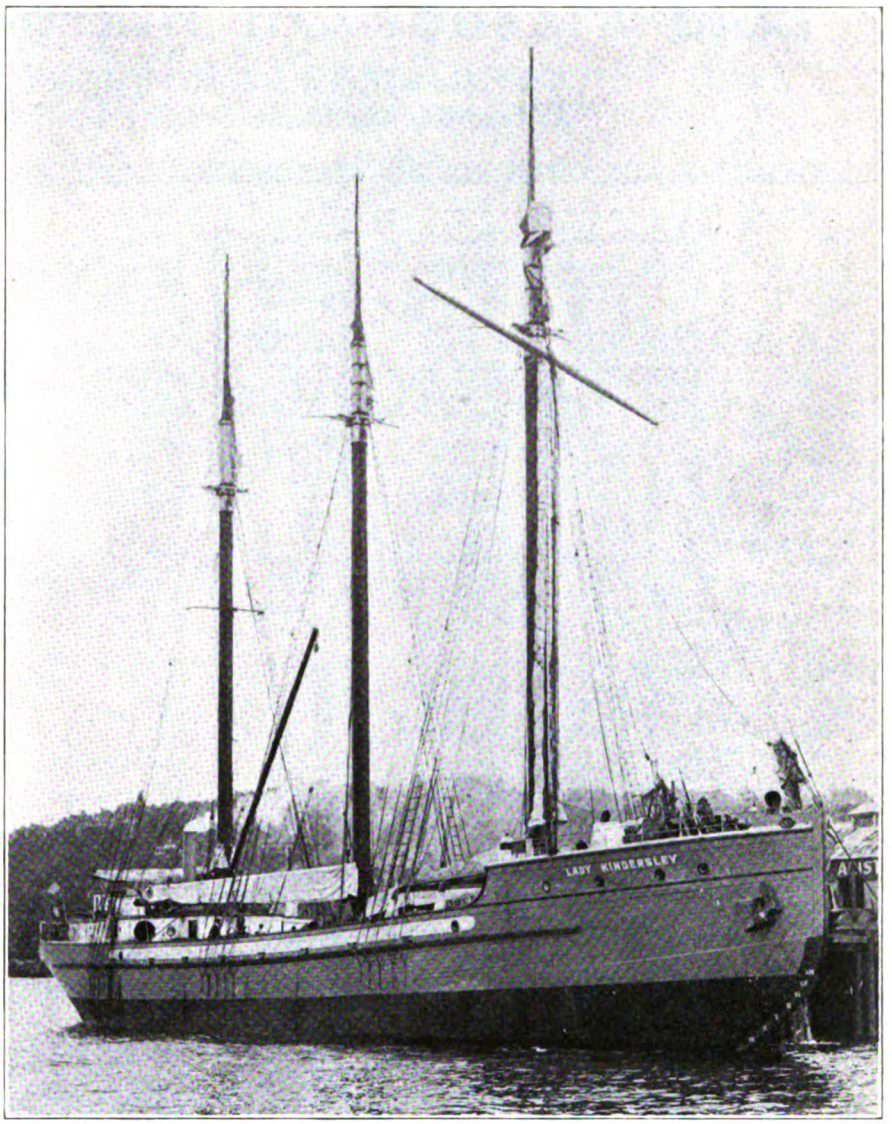
* * *

The Lehigh valley railroad has ordered two car floats from the New York Shipbuilding Co., Camden, N. J. The Chesapeake & Ohio railroad has ordered one car float from the same shipyard and two barges from the Newport News Shipbuilding & Drydock Co., Newport News, Va. The New York Central railroad is inquiring for bids on a ferry.

* * *

The Standard Oil Co. of California has ordered a tanker motorship from the Bethlehem Shipbuilding Corp. at San Francisco. The vessel will be 210 feet long and will be similar in size and equipment to the recently completed tankers Alaska Standard and Standard Service. The vessel will be fitted with twin diesel engines, 400 brake horsepower each, with generators and motors for driving the propellers. The engines will be of the Werkspoor type built by the Pacific Diesel Engine Co., Oakland, Cal.

Arctic Motorship Imprisoned in Northern Ice Pack



HUDSON BAY CO. AUXILIARY FREIGHTER LADY KINDERSLEY
This year, on her fourth annual visit to the Canadian Arctic, she has been caught in heavy ice fields. After futile efforts to release her, the crew was forced to abandon the staunch little ship to its Arctic ice prison. She is described in MARINE REVIEW, February, 1924

The Kolster type radio compass is to be installed on board the steamships YALE and HARVARD, plying between San Francisco, Los Angeles and San Diego, Cal. Contracts have just been closed between the Los Angeles Steamship Co. and the Federal Telegraph Co., sole owner and manufacturer of the compass.

The second largest sand and gravel dredge in inland waters slid into the Ohio river Sept. 18 from the marine ways of the Dravo Contracting Co., Neville Island, near Pittsburgh. The craft was built for the Ohio River Sand Co., Louisville, Ky.

The dredge is of all-steel construction and is steam driven. It has a capacity of 500 tons an hour, is 155 feet long, 44 feet wide and 8 feet deep. Four months were required for completion to the launching stage and another month will elapse before it is ready to be towed to Louisville where it will operate in the Ohio river.

A contract has just been closed with the Sperry Gyroscope Co., Brooklyn, N. Y., which makes it exclusive agent in China and Japan for the Kolster radio compass, according to an announcement made by Ellery W. Stone, president of the Federal Telegraph Co., San Francisco, manufacturer of the radio compass.

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties— A Record of Collisions. Wrecks. Fires and Losses

Name	Date	Nature	Place	Damage Resulting
Arauco	July 16	Aground	Valparaiso	Slight
Aulne	July 16	Disabled	Belos	Not stated
Angkor	Aug. 4	Aground	Shimonoseki	Floated, undam.
Aranco	Aug. 2	Disabled	Valparaiso	Sl. damage
Attivita	Aug. 6	Disabled	St. Vincent	Badly dam.
Archer	Aug. 6	Disabled	Port Said	Prop. lost
John W. Ailes	Aug. 21	Ashore	Rocky Island	Released
Arabic	Aug. 27	Hurricane	Nantucket	Hull dam.
Anna McDonald	Aug. 27	Wrecked; storm	Prospect, Halifax	Total loss
Adam Smith	Aug. 19	Collision	Liverpool	Slight
Arlington Court	Aug. 18	Ashore	Buenos Aires	Floated
Askeladden	Aug. 18	Disabled	St. Johns	To cargo
Ashton	Aug. 18	Fire	Rotherhithe	Slight
Atlanticos	Aug. 19	Ashore	Monte Video	Floated
Apurimac	Aug. 18	Collision	Lima	Undam.
Atlanta M. Jagger	Aug. 30	Ashore	Dutch Is. Harbor	Slight
Allegiance	Aug. 21	Disabled	Berwick	Cyl. broken
Aurania	Aug. 21	Disabled	Christiansand	To valves
Arctic	Aug. 22	Crushed in ice	Cape Smyth	Not stated
Amaxon	Aug. 28	Lightning	Mobile	To rigging
Admiral Rigault de Genouilly	Aug. 14	Fire	Havre	Slight
Bohemia	Aug. 10	Damaged	New York	Broke cyl.
Backworth	July 17	Heavy list	Vasklot Roads	Dam. to bul.
Bretagne	Aug. 6	Grounded	Lysogrand	Leaking
Barge 785	Aug. 15	Fire	Bath	Slight
George A. Boeckling	Aug. 20	Collision	Sandusky Bay	Dam. to wheel
Ben	Aug. 7	Damaged	Erith	Sunk
Billy	Aug. 7	Hvy. weather	Flushing	Not stated
Betterton	Aug. 18	Disabled; towed	New York	Not stated
Canadian Ranger	July 16	On rocks	Montreal	Floated
Cainmona	Aug. 12	Aground	Heath Point	Floated
Checktowaga	Aug. 12	Adrift; fog	Matinicock Is.	Not stated
Chickasaw City	Aug. 14	Collision	San Francisco	Not stated
Cletus Schneider	Aug. 17	Struck sub. object	Victoria Island	Not stated
Cassel	July 24	Ashore	Tandiok Priok	Floated
Cuba	July 28	Disabled	Columbia river	Prop. lost
Cranstone	Aug. 2	Disabled	Copenhagen	Repaired; sl. dam.
Cranfield	Aug. 4	Grounded	Moulmein	Undam.
Canadian Harvester	Aug. 6	Grounded	Tarts Bar Bay	Not stated
Cardiff	Aug. 6	Struck sub. object	St. Catherine's	Not stated
Cetty	Aug. 7	Ashore	Hurst Castle	Not stated
City of Cornith	Aug. 6	Collision	Glasgow	Not stated
City of Seattle	Aug. 18	Fire	Ft Wall St.	Slight
Cairnmona	Aug. 7	Aground	Quebec	Floated
Carriso	Aug. 25	Disabled	San Francisco	Eng. dis.
Casper	Aug. 28	Collision	Buenos Aires	Not stated
Camden	Sept. 2	Disabled	Rockland	Lost rudder
Cape Blomidon	Sept. 2	Struck by gale	Point Lepreaux	To rigging
City of Los Angeles	Aug. 13	Disabled	San Francisco	Not stated
City of Florence	Sept. 4	Ashore	London	Floated
Chatenoc	Sept. 3	Ashore	Point Arena	Not stated
Cariari	Sept. 4	Ashore	Cape May	Floated
Cian Cumming	Aug. 15	Fire	Aden	Serious
City of Manila	Aug. 14	Fire	Taku Bar	Serious
Charles D. Stanford	Aug. 20	Collision	Baltimore	Undam.
Clydemede	Aug. 20	Disabled	Havre	Dam. rep'd.
Crevjotdale	Aug. 21	Grounded	Berwick	Floated
Caroline	Aug. 21	Collision	East Greenwich	Sunk
Dairen Maru	July 29	Collision	Notoro Kabapito	Total loss
David Lloyd George	Aug. 2	Disabled	Natal	Leaking
Dorina	Aug. 5	Fouled	Cowes	Lost fore t'pm't.
Destroyer No. 4	Aug. 6	Grounded; storm	Beppu	Leaking
Dauntless	Aug. 18	Fire, eng. room	Ft. Stanton St.	Consider'ble
Danier	Aug. 22	Aground	Cape Fear river	Not stated
De Grasse	Aug. 25	Disabled	Havre	Slight
Harold Dollar	Aug. 26	Struck sub. object	Columbia river	Dam. 3 blades
David S. Troxel	Aug. 28	Struck sub. object	Duluth Harbor	Broke tail shaft
Dorcas	Aug. 28	Disabled, storm	Gloucester	Badly dam.
Dieter Hugo Stinnes	Aug. 18	Grounded	River Elbe	Floated
Dunkeness	Aug. 12	Aground	Buenos Aires	Not stated
Depute Georges Chaigne	Aug. 21	Disabled	Brest	Condenser dam.
Delfia	July 30	Stranded	Saloum	Floated
Dresden	Aug. 14	Grounded	River Elbe	Not stated
Elswick Park	July 16	Disabled	Alexandria	To furn. & boil.
European	July 29	Disabled	Moville Bay	To engine
El Gedro	Aug. 4	Disabled	San Francisco	Prop. blade lost
Ernest and Rose	Aug. 5	Fouled	Ramsgate	Slight
Explorer	Aug. 19	Fire	Liverpool	Not stated

Name	Date	Nature	Place	Damage Resulting
Eastern Knight	Aug. 20	Collision	Chesapeake Bay	No damage
Erna	Aug. 8	Hvy. weather	Flushing	Not stated
Egremont	Aug. 22	Fire	Pier 98 South	Not stated
Everett	Aug. 26	Disabled; storm	Canso	To cargo
Esther Adelaide	Aug. 28	Disabled	Block Island	Spars gone
Estremadura	Aug. 16	Disabled	Dakar	To furn's.
Elsdon	Aug. 19	Aground	Copenhagen	Not stated
Emblem	Aug. 19	Aground	Berwick	Not stated
Evens	Aug. 16	Stranded; sunk	Christiania Fjord	Raised
Falkenfels	July 17	Grounded	River Scheldt	Floated
Falcon	July	Collision	Ramsgate	Damaged
Farenholt	Aug. 11	Collision	Cape Flattery	Prop. dam.
Freeland	July 29	Ashore	Liverpool	Not stated
Fueloil	Aug. 9	Aground	Tampico Breakwater	Floated; bot. dam.
Floria	Aug. 23	Fire	Brooklyn	Slight
Fedora	Aug. 17	Fire	Aarhus	Not stated
Frederick P. Elkins	Sept. 2	Disabled; storm	Turks Island	Severe
Feodosia	Aug. 21	Fire	Hamburg	Not serious
Frumitz	Aug. 22	Struck quay	Antwerp	Damaged
Garryvale	July 16	Grounded	Buenos Aires	Floated
Gray	July 15	Grounded	Naden Harbour	Slight
Granli	July 16	Not stated	Kirkenes	To engine
Glencoe	Aug. 8	Ashore	St. Johns, N.F.	Floated
Garoet	Aug. 2	Damaged	Aden	Leaking
Goloa	Aug. 4	Disabled	New York	Boil. trble.
Great City	Aug. 6	Struck pier	Newcastle-On-Tyne	Not stated
Grover Warner	Aug. 18	Fire	Ft. Stanton St.	Damaged
Gloria	Aug. 26	Ashore	Queen Anne Pier	Not stated
Georges Creek	Aug. 28	Disabled; storm	New York	Badly
George Allen	Aug. 18	Disabled	Panama	To tailshaft
Graville	Aug. 18	Disabled	Havre	To windlass
Genesta	Aug. 19	Disabled; towed	N.W. Lightship	Lost mast
G. A. Kohler	Aug. 28	Disabled; storm	Florida Strait	Not stated
Greylock	Sept. 2	Disabled	Columbia River	Eng. trble.
Gretaston	Aug. 21	Aground	Off Norway	Cargo dam.
George G. Barnum	Sept. 4	Aground	Sandusky Bay	Floated
Gwladys	Aug. 13	Aground	Buenos Aires	Floated
Grosholm	Aug. 11	Aground	Charlottestown	Floated
Gluesta	Aug. 12	Disabled	Milford Haven	Leaking
Guerets	Aug. 20	Disabled	Caravellas	Prop. fouled
Heister	Aug. 10	Fire	Brooklyn	Not stated
Henriette A. Simmons	Aug. 9	Damaged	Portland	Leaking
Hardanger	July 16	Not stated	Halifax	To f'rpeak & tank
Hallgrim	July 17	Collision	Kobe	Damaged
Havre Maru	July 17	Collision	Kobe	Stem dam.
Haimon	Aug. 4	Grounded	Santa Marta	Undam.
Hilde	Aug. 4	Collision	Antwerp	Badly, ab. water
Hercules	Aug. 4	Fire	Buenos Aires	Not stated
Horda	Aug. 4	Disabled	Honolulu	Eng. trble.
Harvester	Aug. 6	Grounded	Spittal Point	Afloated
Hetty	Aug. 7	Grounded	Hurst	Not stated
Hvitra	Aug. 7	Heavy list	Gefle	Leak. tanks
Havdrot	Aug. 7	Fire	Belfast	To cargo
Harbor Lighter	Aug. 29	Capsized	Pier 2 Hoboken	Not stated
Helder	Aug. 17	Hvy. weather	Flushing	Not stated
Heather Pet	Aug. 18	Disabled	Lynn	Eng. trble.
Heiyo Maru	Aug. 13	Collision	Osaka	Consider'ble
Hegira	Aug. 31	Disabled	Manchester	Prop. blades
Hampton Roads	Aug. 30	Disabled	Crooked Island	To turbine
Hubbastone	Aug. 22	Hit wreckage	Llanelly	To blades
Hindustan	Aug. 14	Disabled	Rio Janeiro	Leaking
Herbert	Aug. 6	Collision	Off Nahant	Sunk
Il Primo	Aug. 4	Rough sea	Famagusta	Slight
Iroquois	Aug. 19	Struck pier	South Haven	Seriously
Ivor	Aug. 19	Disabled	Halifax	Eng. trouble
Idlewild	Sept. 2	Disabled	Peekskill harbor	Sank
Irish Monarch	Aug. 21	Disabled	Martin Garcia	Not stated
John Baptist	Aug. 3	Disabled	Milford Haven	Strip. prop.
J N Pew	Aug. 30	Aground	Dan Baker	Not stated
Johanna Maria II	Aug. 18	Fire	Antwerp	To cargo
Korona	July 9	Disabled	Puntales Pier	Leaking
Krim	July 16	Rough weather	Bendu	Total wreck
Kentucky	Aug. 12	Ashore	Pentland Firth	Floated
K 5187	Aug. 22	Collision	Fort Hamilton	Sank
Keemun	Aug. 25	Disabled	New York	Eng. trble.
King Howel	Aug. 18	Collision	Callao Dock	Undam.
Kong Gudrod	Aug. 18	Ashore	Bergen	Floated
Kia Ora	Aug. 19	Struck quay	Middlesbro	Slight
Koyo Mau	Sept. 2	Aground	Columbia river	Afloat
Kirsten Jensen	Aug. 30	Fire	Newfoundland	Not stated
Kennebec	Sept. 3	Disabled	Tyne	To mach.

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties— A Record of Collisions, Wrecks, Fires and Losses

Name	Date	Nature	Place	Damage Resulting
Koft	Aug. 13	Ashore, rocks	Cape Elizabeth	Not stated
Kitty Anne	Aug. 14	Aground, sand	Bude Harbour	Not stated
Kodrus	Aug. 25	Aground	Rosario	Not stated
Lassen	Aug. 6	Heavy list	Constantza	Not stated
Lincoln	Aug. 21	Heavy list	Portland	Not stated
Liberty	Aug. 22	Collision	Fort Hamilton	Not stated
Lochee	Aug. 18	Disabled	Bordeaux	Damaged
Locking Navel	Aug. 21	Disabled	Hamburg	Mach. dam.
Lexa Maersk	Aug. 14	Ashore	Middlegrunded	Floated
Laristan	Sept. 4	Collision	Gulf of Mexico	To stern
Lady Mary	Aug. 15	Collision	West Blyth Buoy	Not stated
Lady Kindersley	Aug. 16	Caught in ice	Arctic ocean	Total loss
Lubrico	Aug. 26	Ashore	Point Wells	Floated
Lochmonar	Sept. 8	Collision	Off Astoria	Slight
Lucille Greaser	Sept. 8	Disabled; towed	Cape Broyle	Lost sails
J. L. Luckenbach	Sept. 8	Aground	Columbia river	Floated
La Marea	Aug. 12	Aground	Port Limon	Floated
Leodium	July 15	Ashore	Rosario	Floated
Lamares	Aug. 12	Aground	Nicaraguan coast	Not stated
Litchfield	Aug. 11	Collision	Cape Flattery	Bow dam.
Lord Ormonde	July 28	Grounded	Montreal	Not stated
Liberty Glo	Aug. 2	Collision	Santos	Above water line
Libourne	Aug. 2	Heavy sea	Nantes	Badly dam.
Lotte	Aug. 4	Fouled	Holtenau	Undam.
Linkmoor	Aug. 3	Touched bot.	Metis	Leaking
Lord Antrim	Aug. 3	Grounded	Londonderry	Refloated
Lord Wimborne	Aug. 5	Disabled; towed	Grimsby	Lost prop.
Manuata	Aug. 6	Fog; struck snoal	Canao Harbor	Damaged
Martha Woermann	July 15	Abandoned	Warri	Not stated
Metagama	July 16	Grounded	Quebec	To bottom & stem
Megna	July 28	Heavy sea	Mauritius	Badly dam.
Myles Standish	July 28	Ashore	Oak Bluffs	Float; leak.
M. and J. Tracy	July 28	Disabled	New York	Prop. brok.
Maindy Transport	July 29	Disabled	Cardiff	Slight
Malakand	Aug. 5	Grounded	Calcutta	Lost anchors
Maisette	Aug. 5	Grounded	Margate Sands	Floated
Mussett	Aug. 4	Ashore	Margate Sands	Floated
Milluna	Aug. 5	Ashore	Port Kembla	Floated
Matinicock	Aug. 6	Grounded	St. Lawrence river	Floated
Meyer	Aug. 19	Damaged	Menominee river	Not stated
Mazama	Aug. 19	Disabled	Sandy Hook	Eng. trble.
Mexican	Aug. 19	Fire	Panama	Cargo dam.
Mineric	Aug. 22	Disabled	Boston	Mach. trble.
Mildred McNally	Aug. 26	Disabled	Roanoke Marshes	Sank
Mattie J. Alles	Aug. 28	Disabled	East Boston	Leaking
Marguerite M. Wemyss	Aug. 29	Disabled	Newport News	Leaking
Meiyo Maru	Aug. 13	Collision	Osaka	Consider'ble
Menapied	Aug. 18	Disabled	Rio Janeiro	Leaking
Mairo	Aug. 18	Aground	Lobos Island	Not stated
Mjolner	Aug. 19	Aground	Plevna Light-vessel	Leaking
Macodonier	Aug. 19	Collision	Antwerp Roads	Slight
Monterey	Aug. 31	Ashore	Carystort Light	Floated
Magmeric	Aug. 20	Disabled; storm	Hamburg	Slight
Mont Sant	Aug. 19	Disabled	Tarragona	Prop. shaft
Majestic	Aug. 25	Grounded	West Bramble Buoy	Floated
Margarita	Aug. 22	Stranded	Seville river	Floated
Merkara	Aug. 14	Collision	Flamborough	Not stated
Muchaco I	Aug. 13	Collision	Hamburg	Not stated
Marechal Gallieni	Aug. 13	Disabled	Kilindini	Lost blade
Middle Castle	Aug. 11	Disabled	Cardiff	Not stated
Montes	Aug. 14	Disabled	Rio Janeiro	Leaking
New Moss Rose	July	Collision	Ramsgate	Not stated
No. 5 Steel Land Dredger	July 25	Disabled	Batu Gajah	Damaged
Newhaven	Aug. 5	Ashore; fog	Dieppe	Floated
Noresco	Aug. 5	Collision	Cowes	Damaged
Niagara	Aug. 19	Disabled; towed	Racine	To shoe & rud.
Newglyn	Aug. 7	Ashore	Llanelly Light-house	Extensive
Naneric	Aug. 22	Disabled	Aden	To boilers
Nordsoen	Aug. 15	Disabled	New Waterway	Boil. leak.
H. K. Oakes	Aug. 12	Ashore	White Fish Point	Not dam.
Ofanto	July 16	Abandoned	Bizerta	Heavy
Orowaiti	Aug. 12	Aground	Point Buchon	Not stated
Oaklands Grange	July 28	Disabled	Rosario	Lost anchor chain
Orlando	Aug. 6	Collision	Malta	Slight
Palmella	July 17	Disabled	Hull	Leaking
Piscator	Aug. 5	Grounded	Eyemouth	Floated
Pontoon Barge	Aug. 3	Foundered	Prai river	Not stated
Pennsylvania	Aug. 18	Disabled	Bermuda	Def. mach.
J. H. Prentice	Aug. 19	Collision	Hersen's Island	Damaged
P. L. M. 20	Aug. 7	Disabled	Gibraltar	To plates
Phidegones	Aug. 15	Stranded	Cude Tonge	Brok. in two

Name	Date	Nature	Place	Damage Resulting
Robert Dollar	July 17	Fire	Shanghai	Destroyed
Roxburgh	July 28	Collision	Buenos Aires	Undam.
Roa	July 28	Disabled	Boston	Slight
River Tawe	July 29	Disabled	Cardiff	Repaired
Ruurlo	July 29	Disabled	Waterfore	Eng. trble.
Reindeer	Aug. 3	Grounded	Castletown Bere	Floated
River Fly	Aug. 6	Ashore; fog	Penzance	Refloated
Ring	July 24	Hit by stmr.	Manchester	Undam.
Ripple	Aug. 7	Drifting	Wellington	Eng. broken
Raymond	Aug. 12	Disabled	San Francisco	Eng. trble.
W. T. Roberts	Aug. 19	Collision	Hersen's Island	Damaged
Richard Reiss	Aug. 20	Disabled	Channel Butler St.	Lost anchor
Rica	Aug. 6	Heavy list	Huelva	Slight
Rosina	Aug. 7	Disabled	King's Dock	Not stated
Rosalie Hull	Aug. 26	Ashore	Lewes	Floated
Ryufuku Maru	Aug. 21	Disabled; typhoon	Goto Island	Leaking
Romagne	Aug. 21	Struck bar	Gray's Harbour	Bot. dam.
Reedness	Aug. 13	Ashore	Mablethorpe	Afloat
Robert H. Merrick	Aug. 14	Disabled	Corcubion	Boil. trble.
Rio Claro	Aug. 26	Fire	Wellington	No damage
P. J. Ralph	Sept. 9	Ashore	Manitou Island	Total loss
Recto	Sept. 1	Hvy. weather	Philadelphia	To bridge
J. L. Reiss	Sept. 11	Aground	Niagara River	Released
Scaramouche	July 16	Disabled	Brunsbutteikoog	To engine
Shamut	Aug. 12	Collision	Long Island	Not stated
Stephen R. Jones	Aug. 15	Struck obst.	Boston	Not stated
Sagamore	Aug. 16	Aground	Bar Point	Afloat
Schoodic	July 28	Collision	Buenos Aires	Slight
Shannonmede	July 28	Disabled	Rosario	Lost anchor
Shinpo Maru	July 28	Collision	Notoro, Kabapito	Slight
Silverway	July 26	Grounded	Havana	Floated
Snyg	July 28	Disabled	Archangel	Slight
Sheevia	July 29	Broke from moorings	Bangor	Sank
Sumanco	July 28	Disabled	Portland, Oreg.	Not stated
San Fabian	Aug. 3	Disabled	St. Lucia	Eng. trble.
Stadsdijk	Aug. 2	Disabled	Aden	Badly dam.
Sargon	Aug. 5	Ashore; fog	Criden Bay	Floated
Sarpfos	July 24	Grazed	Manchester	Not stated
Set Weather	Aug. 4	Fouled	Ramsgate	Damaged
Steigerwald	Aug. 2	Struck obj.	Santos	Damaged
Soald Jarl	Aug.	Disabled	Kotka	To bulwark
St. Patrick	Aug. 16	Fire	New York	Slight
Southern Cross	Aug. 19	Aground	Santos	No dam.
Chas. D. Stanford	Aug. 20	Collision	Chesapeake Bay	Stern dam.
San Benito	Aug. 7	Collided, pier	Brooklyn	Slight
Steelore	Aug. 21	Disabled	Vera Cruz	Mach. trble.
M. Shiras	Aug. 21	Lightning	Lake Superior	Undam.
Sinasta	Aug. 25	Disabled	Boston	Damaged
Socony	Aug. 28	Ashore; gale	Providence	Afloat
Susanne	Aug. 29	Disabled	Savannah	To rigging
Spanker	Aug. 19	Collision	Antwerp Roads	Not stated
Scottish Musician	Aug. 18	Disabled	Gibraltar	To engine
Storvik	Aug. 18	Disabled	Bordeaux	To condenser
Salawati	Aug. 19	Collision	Antwerp	Not stated
San Katy	Sept. 2	Fire	Fairhaven	Total dam.
Southern Flower	Aug. 9	Disabled	Monte Video	To plating indent.
Siam	Aug. 11	Fire	Baltic Sea	Slight
Sterna	Aug. 20	Disabled	Monte Video	Dismasted
Strathlorne	Aug. 20	Disabled	Hong Kong	Badly dam
Tairei Maru	July 28	Collision	Cape Notoro	Not stated
Thanet	Aug. 5	Fouled	Cowes	Undam.
Trevaylor	Aug. 6	Disabled	Falmouth	To air pump
Tesco	Aug. 20	Ashore	Piraeus	Not stated
Wm. Thomas	Aug. 15	Ashore	Fort Point Ledge	Undam.
Tulsa	Aug. 22	Ashore	Rebecca Shoal	Afloat
B. H. Taylor	Sept. 1	Collision	Detroit river	Not stated
Tafna	Aug. 12	Fire	Algiers	To cargo
Tongrie	Aug. 19	Collision	Antwerp dock	To bridge
Tusten	Aug. 16	Disabled	Panama	To plates
Takasago Maru	Aug. 22	Bad weather	Croshima	Leaking
Unadilla	Aug. 14	Collision	San Francisco Bay	Not stated
Unten Maru	July 30	Grounded	Tokio	Floated
Ursula	Aug. 18	Coll., buoy	Cuxhaven	Prop. dam
Vledderveen	July 28	Disabled	Setubal	Slight
Valborg	July 28	Disabled	Visby	Leaking
Voronej	Aug. 4	Disabled	Hamburg	Mach. dam.
Vesuvius	Aug. 6	Collision	Malta	Slight
Wimbledon	Aug. 4	Collision	Holtneau	Slight
West Calera	Aug. 6	Disabled	Chili	Mach. dis.
Warwick	Aug. 22	Disabled; towed	Coos Bay	Eng. trble.
Wanderer	Aug. 27	Ashore	Long Island Sound	Total wreck
Windso	Aug. 15	Collision	Barry	Slight
Wylam	Aug. 25	Fire	Northumberland dock	Not stated
Yselhaven	July 16	Disabled	Sydney, C. B.	Slight
Yarra	Aug. 20	Fire	Yokohama	Slight
J. B. Young	Sept. 2	Aground, gale	Grand Isle	To sails

Resigns Presidency of Big Shipyard

AT THE annual meeting of the American Shipbuilding Co. in September, M. E. Farr, president, announced that the directors had acceded to his request to resign that office. He had been contemplating this action for some time, and the completion of the two large passenger liners for the Detroit & Cleveland Navigation Co. and the large motor vessel for Henry Ford, offered a fitting climax to his 32 years of service in the shipbuilding industry.

As head of one of the country's largest shipbuilding plants, Mr. Farr has long held a front rank in the business world. He became president at the close of 1915 and thus piloted his company through the trying days of the war and the post war periods. With several yards at different lake ports, the company proved capable of great expansion to meet the war needs. It built more ocean going freighters than any other shipyard as well as holding to a high standard of quality and performance.

Mr. Farr was born in Clayton, N. Y., Oct. 5, 1863, and after graduating from the high school there, served on the lakes for one season. He then entered the employ of the banking firm of Elias Farr & Co., Marquette, Neb., and when only 21 became cashier of the bank and a year later was placed in charge. In 1892, he went to Detroit as bookkeeper and cashier of the Detroit Dry Dock Co. In May, 1899, he was made secretary and treasurer and in 1905 succeeded W. C. McMillan as vice president. He succeeded Mr. McMillan as president in 1907. When he became vice president of the American Shipbuilding Co., the parent organization in September, 1914, he retained his office as president and treasurer of the Detroit company, which had become the Detroit Shipbuilding Co.

R. W. Morrell Opens Office as Engineer

R. W. Morrell for the past three and a half years marine superintendent of the Tidewater Oil Co., New York, announces that he has resigned from his position with this company for the purpose of entering private practice as consulting naval architect, marine engineer and surveyor. His office will be located in the Munson Steamship Line building, 67 Wall street, New York.

Mr. Morrell graduated from Cornell University in 1909, with the degree of M. E., specializing in naval architecture and marine engineering. Since his graduation he has been continuously engaged in supervisory work in connection with shipbuilding and ship repairs. Early in his experience, while with the Newport News Shipbuilding & Drydock Co., he specialized in tank construction. After that for seven years as assistant marine superintendent with the Standard Oil Co. of New Jersey and later as naval architect of this company, he had complete charge of the construction of 41 tank steamers in 16 different shipyards, including the two 20,000 deadweight ships, the largest tankers in existence, and the 20,000 ton combination oil and ore carrier.

A little over three years ago, Mr. Morrell joined the Tidewater Oil Co. as marine superintendent where he was in charge of personnel, stores, maintenance reports and physical performance of its tank steamer fleet. He made an excellent record with this fleet for economy, efficiency, and dispatch. While with the Standard Oil Co. and the Tidewater Oil Co., he engaged in some consulting work, including many damage surveys. His experience also includes surveys of various vessels contemplated for purchase, chartering or conversion. Mr. Morrell served for

R. W. MORRELL

one year as chairman of the technical committee of the American Steamship Owners committee and also served on the subcommittees of the National Fire Protection association's marine committee. He is a member of the Society of Naval Architects and Marine Engineers. Mr. Morrell is widely known in marine circles.

Communicating Systems for Ford Ships

Electric telegraphs used on the two Ford motorships were supplied by Chas. Cory & Son, Inc., New York, and are of the design used both in the navy and in merchant service. These include telegraphs for both engine order and docking purposes. As a part of the plan to facilitate communication about the ship or with other vessels, the same company has supplied for these ships its type of antinoise telephones for use between the pilot house and the engine room, this being a 2-station system. The company also installed a 10-station system for general intercommunication about the vessels. Electric whistle control systems for operating the ship's whistles and automatic running light panels to increase safety of navigation also were supplied.

Congressman William S. Greene, Fall River, Mass., died Sept. 22 from pneumonia developed after a fall on the street a week earlier in which he fractured his hip. He was 84 years old and had served in congress since 1898, being renominated a few weeks ago.

He was for years a member of the merchant marine committee and recently served as chairman. He was always an active advocate of helpful shipping legislation.

From the Old Log Book

Stray Items from MARINE REVIEW Files of 10, 20, 30 and 40 Years Ago

October, 1884

LAKE operators were getting interested in a new trade, carrying grain from the western states. Western railroads had just begun to campaign for carrying grain to Duluth, elevators were being built there, and the Great Lakes were ready to figure in the grain haul instead of all the grain going to Europe by way of Cape Horn. (Times have changed. The Duluth-Buffalo haul is no longer enough so the St. Lawrence waterway is being urged. Also, the Pacific has come back and ships western grain to Europe by grace of the Panama canal.)

* * *

Vessel men complain very much, saying it is the worst time in their recollection, nothing to carry and starvation rates when there is an occasional cargo.

* * *

Ashland, Wis., was getting its start as an ore port, the contract being let for the largest ore loading dock in the world, 1400 feet long with a capacity of 25,000 tons.

* * *

The schooner ANNIE M. PETERSON, *Capt. W. H. Decker, made what was said to be a record passage. She left Green Bay, Wis., Oct.* 15, *loaded ore at Escanaba, and reached Cleveland Oct.* 19, *making the run from Green Bay in* 3 *days,* 18 *hours and* 30 *minutes and from Escanaba in* 2 *days,* 16 *hours and* 30 *minutes, dock to dock.*

October, 1894

A REPORT showed 3341 vessels on the lakes, of which 1731 were steamers, 1139 sailers, 386 canal boats and 85 barges. The tonnage was 1,227,400.

* * *

A combination of vessel owners had tried to force a 50-cent rate on carrying coal up the lakes but outside tonnage was abundant enough to defeat the combine.

* * *

Capt. George Washington Jones died aged 82. *He was the first man to abandon the salt water custom of endwise launching, putting the propeller* EMPIRE *sidewise into the water at Cleveland in* 1841. *He was a heavy owner in the first iron vessel,* ONOKO. *He built the* JOHN JACOB ASTOR, *the first vessel launched on Lake Superior. On her maiden trip, her captain, Charles Stannard, discovered and named Stannard rock.*

* * *

Changes in Soo canal water levels led to a calculation as to the weight of rainfall on Lake Superior. It was worked out that a one inch rainfall on this lake would equal 546 billion gallons, or 2,265,120,000 net tons. For all the lakes the weight would be nearly seven billions tons.

* * *

The presidency of the Lake Carriers' association was actively debated. In its first three years, M. A. Bradley, Capt. Thomas Wilson and James Corrigan had presided. William Livingstone and Capt. E. M. Peck were regarded as favored candidates. (Mr. Livingstone has been president since 1902.)

October, 1904

TEN big lake ships were ordered in two months. Prediction is made that the 9000 and 10,000-ton bulk freighter is the bulk carrier of the future. (Now they run up to 13,000 tons).

* * *

James C. Wallace was elected president of the American Shipbuilding Co. and Robert Logan was made general manager.

* * *

A political campaign was on and the Democratic platform is repeated as it pledged fully a merchant marine winning policy. The platform urged discriminating duties and tonnage taxes. (In 1924 the two platforms carry a vague statement about the necessity of shipping and promise the disappearance of government ownership at some indefinite time).

* * *

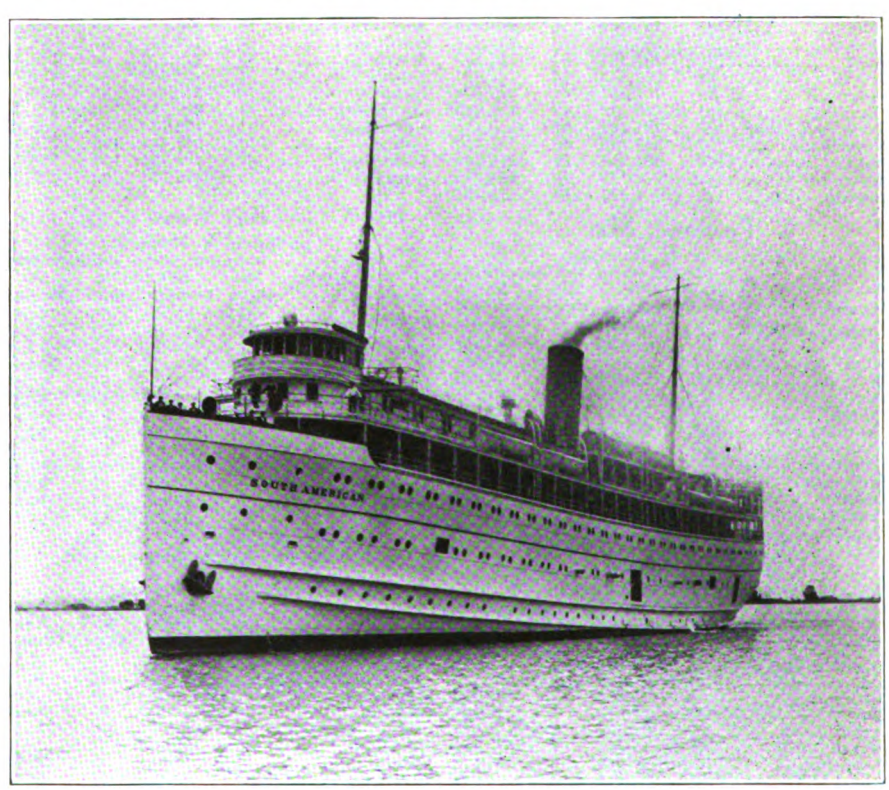
The Pacific Coast Steamship Co. decided to abandon oil as fuel since its passengers were timid about boarding oil burning vessels.

October, 1914

BLACK Rock ship canal at Buffalo is thrown open to commerce, having been started in 1908.

* * *

The European war was beginning to dominate the marine trade. The ship registry act was passed and American owned ships under foreign flags were beginning to register under the Stars and Stripes.



LAKE PASSENGER LINER SOUTH AMERICAN WHICH CAUGHT FIRE AND WAS NEARLY DESTROYED AS SHE WAS BEING LAID UP FOR THE WINTER AT HOLLAND, MICH., EARLY IN SEPTEMBER

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	406	1,650,694	479	2,018,621
July	491	1,937,802	525	2,081,663
June	465	1,882,471	495	2,014,598
May	466	1,811,769	520	2,046,833
April	469	1,814,848	504	1,958,579
March	418	1,517,503	459	1,694,905
February	378	1,467,340	445	1,738,675
January	370	1,513,056	434	1,749,172
December, 1923.	383	1,507,914	445	1,658,423
November	418	1,768,503	461	1,976,338
October	462	1,868,446	489	1,993,758
September	428	1,818,981	477	1,978,023
August	468	1,855,045	520	2,039,732

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)
(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	86	192,777	57	138,280
July	90	195,704	63	149,736
June	94	214,439	75	179,939
May	99	219,934	76	216,237
April	82	195,774	82	232,501
March	80	203,260	66	190,240
February	86	224,309	64	186,373
January	60	151,915	53	155,550
December, 1923.	78	227,055	64	190,644
November	78	198,122	54	135,077
October	93	241,457	64	178,279
September	92	236,293	74	182,700
August	97	251,295	73	180,771

Boston

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	120	293,661	91	176,563
July	139	351,477	99	193,747
June	147	283,982	110	200,026
May	122	260,300	100	219,216
April	100	282,324	63	165,557
March	89	262,438	50	132,863
February	99	307,627	44	133,504
January	84	250,335	47	116,832
December, 1923.	102	285,125	48	130,115
November	91	305,230	60	166,404
October	118	354,296	59	156,940
September	117	307,719	79	185,726
August	126	302,391	86	178,706

Portland, Me.

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	24	52,400	25	54,739
July	18	43,926	22	49,365
June	20	34,631	19	31,911
May	19	33,970	21	40,832
April	17	75,406	21	91,045
March	23	79,648	22	72,517
February	20	67,476	22	69,594
January	22	56,749	23	59,235
December, 1923.	29	104,724	26	100.583
November	25	80,910	24	74,849
October	19	39,456	15	32,471
September	9	22,724	10	25,582
August	11	24,155	8	18,838

Providence

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	7	21,863	5	18,916
July	8	27,747	7	28,736
June	5	21,873	4	10,456
May	10	23,795	4	17,931
April	9	30,592	6	18,959
March	7	33,895	6	23,517
February	10	39,388	8	35,236
January	8	33,215	7	28,927
December, 1923.	12	43,345	7	23,294
November	5	23,038	6	15,700
October	8	30,248	9	24,821
September	9	31,514	12	41,646
August	9	34,323	9	27,664

Baltimore

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	90	278,346	105	329,470
July	106	318,585	106	318,182
June	117	339,212	104	298,765
May	122	369,797	126	378,501
April	112	329,900	106	510,159
March	98	297,869	110	331,665
February	98	310,158	107	335,108
January	85	270,169	99	315,804
December, 1923.	117	365,142	110	354,229
November	90	280,617	91	279,278
October	96	285,871	95	297,566
September	94	292,315	99	297,965
August	100	303,073	92	262,306

Norfolk and Newport News

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	27	80,338	94	281,959
July	30	78,138	102	301,920
June	36	105,301	83	235,667
May	27	73,846	94	269,752
April	27	82,382	83	234,550
March	19	55,501	81	243,065
February	36	105,233	90	259,085
January	31	96,074	79	249,575
December, 1923.	30	86,444	75	219,325
November	24	65,263	83	239,807
October	18	56,473	65	188,805
September	14	37,823	65	184,646
August	36	113,070	81	244,366

Galveston

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	61	177,941	87	268,774
July	52	147,279	58	172,847
June	41	133,079	55	170,181
May	58	148,758	69	200,846
April	54	154,343	67	196,610
March	57	176,379	88	287,398
February	55	152,950	80	236,761
January	70	210,110	96	317,105
December, 1923.	71	219,767	106	313,231
November	61	172,824	95	301,148
October	83	209,343	108	334,544
September	64	164,854	100	290,715
August	69	172,330	92	257,371

Key West

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	81	93,805	82	94,682
July	94	110,228	91	106,127
June	54	65,770	58	71,102
May	98	110,675	95	104,661
April	92	95,435	85	90,677
March	103	112,577	89	97,276
February	83	83,118	78	84,678
January	69	79,224	70	82,775
December, 1923.	71	88,377	71	91,121
November	80	97,642	85	97,599
October	83	103,328	82	95,506
September	69	77,687	74	84,612
August	80	94,591	82	93.028

Portland, Oreg.

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	22	78,722	31	118,526
July	11	45,451	22	84,195
June	20	72,801	29	104,309
May	16	58,889	21	72,663
April	26	90,286	33	115,504
March	27	103,891	32	118,406
February	23	85,301	35	130,528
January	12	47,848	25	97,674
December, 1923.	30	99,748	34	120,487
November	30	113,362	34	120,487
October	21	78,191	48	174,275
September	23	86,194	41	138,470
August	17	64,218	31	106,478

New Orleans

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	247	645,151	252	676,881
July	241	650,671	250	687,005
June	240	622,326	223	588,554
May	260	703,950	264	696,397
April	249	646,315	262	653,740
March	225	542,040	222	538,642
February	217	604,411	227	610,455
January	217	595,087	220	588,703
December, 1923.	239	632,193	231	634,300
November	216	575,102	218	605,923
October	226	605,211	239	649,791
September	205	548,914	169	444,881
August	235	605,671	249	639,802

San Francisco

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
June, 1924	54	188,984	57	196,854
May	63	226,130	62	197,082
April	52	161,682	72	172,155
March	57	190,588	62	210,134
February	53	185,226	59	211,896
January	65	215,020	68	229,206
December, 1923.	63	209,105	68	234,960
November	69	281,081	70	243,152
October	56	205,175	71	249,035
September	43	165,798	63	209,930
August	64	208,625	65	224,918
July	68	244,530	58	189,348
June	59	204,204	65	227,566

Seattle

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	35	149,904	41	179,108
July	35	156,626	47	197,330
June	50	211,828	45	175,319
May	46	188,853	43	177,581
April	46	196,591	53	220,763
March	57	236,620	45	191,152
February	48	189,146	54	213,851
January	57	233,002	60	242,577
December, 1923.	48	206,466	52	224,112
November	48	199,115	46	191,022
October	39	184,717	47	200,668
September	32	142,052	40	159,006
August	39	173,885	37	163,188

Mobile

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
August, 1924 ..	75	145,597	73	147,681
July	77	161,386	81	169,218
June	90	196,589	73	164,783
May	74	146,668	80	157,653
April	80	158,109	70	133,920
March	83	178,637	84	182,491
February	79	168,182	86	174,517
January	81	158,416	83	159,081
December, 1923.	83	165,163	75	156,579
November	74	148,297	78	145,886
October	68	123,532	60	120,606
September	60	126,005	52	105,247
August	64	191,968	67	146,191

Houston

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
July, 1924	59	77,062	57	288,417
June	65	74,794	72	336,312
May	72	64,937	71	362,350
April	78	76,466	73	337,757
March	88	113,064	87	411,715
February	62	82,601	65	228,178
January	60	55,037	58	267,066
December, 1923.	74	73,876	70	304,359
November	84	83,490	82	350,703
October	75	24,076	70	268,416
September	66	58,704	61	92,664
August	58	43,258	56	211,345
July	48	42,447	48	177,666

Death of H. W. Collart

Houghton W. Collart, manager of the advertising copy and art service department of the Penton Publishing Co., died Sept. 18 at Cleveland after several weeks' illness, aged 41 years. He had been in the service of the Penton company for 17 years and was widely known as one of the most successful advertising art service managers in the country. He was chairman of the committee which wrote the popular "Handbook for Business Paper Advertisers" for the Associated Business Papers, Inc., which is regarded as standard. Personally Mr. Collart was a most likable man, popular among his fellow employes and with a wide and discriminating advertising clientele because of his keenness of perception, sound judgment, progressiveness and fine sense of art values. He is survived by his widow and three children.

WILLIAM W. GILLMAN, who has been United States local inspector of steam vessels at Boston for the past 33 years, has retired. JOHN T. STEWART, assistant inspector of boilers there for the past 11 years, has been named to fill the vacancy of local inspector.

Buys Passenger Liner

The McCormick Steamship Co., San Francisco, purchased the passenger steamer ROSE CITY from the San Francisco & Portland Steamship Co., a subsidiary of the Union Pacific railroad. The railroad is retiring from the steamship business. The sale includes an exclusive traffic arrangement between the steamship and railroad companies while the railroad will build a $500,000 dock at Portland for the use of the steamers. The ROSE CITY is a steel steamer of 2154 net tons, built at Chester, Pa. in 1889.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to Sept. 22, 1924, on Future Loadings

NOTE: FREIGHT RATES STEADY WITH MARKED INCREASE FOR GRAIN, FLOUR AND COTTON

New York to	Grain	Provisions	Cotton (H. D.)	Flour	General cargo cu. ft.	General cargo 100 lbs.	††Finished steel	REMARKS Freight Offered
Liverpool	2s 9d‡	$0.50	$0.35	$0.18	$0.40	$0.75	$7.00T	Good
London	2s 9d‡	0.50	0.30	0.18	0.40	0.75	7.00T	Good
Christiania	$0.20	0.45	0.50	0.27	0.42½	0.85	8.00T	Good
Copenhagen	0.20	0.45	0.40	0.26	0.42½	0.85	8.00T	Good
Hamburg	0.17	0.35	0.35	0.22	0.37½	0.75	8.00T	Very Good
Bremen	0.18	0.35	0.35	0.23	0.37½	0.75	8.00T	Very Good
Rotterdam and Amsterdam.	0.17	0.32½	0.40	0.22	0.35	0.70	7.50T	Very Good
Antwerp	0.14 to 0.16	0.32½	0.35	0.22	0.35	0.70	7.00T	Improved
Havre	0.18 to 0.19	0.50	0.30	0.27½	0.40	0.75	8.00T	Improved
Bordeaux	0.18 to 0.19	0.50	0.30	0.27½	0.40	0.75	8.00T	Improved
Barcelona	0.20 to 0.25	12.00T	0.30	10.00T	—12.00T—		10.00T	Fair
Lisbon	0.20	0.65	0.40	7.00T	—20.00T—		7.00T	Fair to Good
Marseilles	0.17	0.55	0.50	5.60T	—20.00T—		5.00T	Improved
Genoa	0.17	0.50	0.40	0.27	0.40	0.80	6.00T	Good
Naples	0.17	0.50	0.40	0.27	0.40	0.80	6.00T	Good
Constantinople	0.23	17.00T	0.75	0.32½	—20.00T—		9.00T	Improved
Alexandria	None	17.00T	0.75	0.32½	—20.00T—		9.00T	Improved
Algiers	0.20	0.75	0.75	0.40	—20.00T—		7.00T	Improved
Dakar	.....	14.50T	.....	12.00T	—20.00T—		10.00T	Good
Capetown	12.00T	12.00T	.....	10.00T	—12.00T—		9.00T	Good
Buenos Aires	.....	18.00 to 20.00T	.....	.....	18.00 to 20.00T†	8.00 to 8.80T		Improved
Rio de Janeiro	.....	19.00 to 21.00T	.....	7.00 to 7.70T	19.00 to 21.00T†	6.00 to 6.60T†		Improved
Pernambuco	.....	22.00T	.....	9.00T	—22.00T—†		8.60T†	Fair
Havana	0.22½ to 0.27½*	0.42½*	.....	0.22½*	0.54*	1.08*	0.20*	Good
Vera Cruz	0.25	0.40	0.45	0.25	0.52½	1.05	0.30 to 0.35	Fair
Valparaiso	.....	1.07	.....	0.70	0.45	0.80	10.00T	Good
San Francisco	.....	0.40 to 0.70	.....	0.50 to 1.10	....	2.50	0.55 to 1.00	Good
Sydney	.....	18.00T	2.50	18.00T	18.00-24.00T		9.00-12.00T	Quiet
Calcutta	.....	16.00T	0.60	12.00T	—16.00T—		10.00T	Fair

T—Ton. ‡Per quarter of 480 lbs. †Landed. ††Heavy products limited in length. *Extra charge for wharfage.

From North Pacific Ports to	Lumber Per m. ft.
San Francisco	$5 00
South California	5.00 to 6.00
Hawaiian Islands	9.50 to 10.50
New Zealand	11.00 to 13.00
Sydney	11.00 to 13.00
Melbourne-Adelaide	11.50 to 13.50
Oriental Ports	7.00 to 8 00
Oriental Ports (logs)	9.50 to 10.50
Peru-Chile	12.00 to 14.00
South Africa	17.50 to 19 00
Cuba	12.00 to 13 00
United Kingdom	80s to 90s
United Kingdom (ties)	70s to 80s
Baltimore-Boston range	$12.50 to 14.00
Baltimore-Boston range. (ties)	Not quoted
Buenos Aires	14.00
Flour and Wheat	
Oriental Ports (net ton)	$ 4.50 to 5.50
U. K. and Continent (gross ton)	31s to 33s
Mediterranean	35s to 37s 6d

Principal Rates To and From United Kingdom

	s	d
Grain, River Plate to United Kingdom	24	0
Coal, South Wales to Near East	11	3
Coal, United Kingdom to Buenos Aires	11	3
Manganese Ore, Poti to Philadelphia	$4.00	
Pig iron, United Kingdom to New York or Philadelphia	14	0
Iron ore, Bilbao to Middlesbrough	6	9
Iron ore, North Africa to Philadelphia	7	3

Bunker Prices

At New York

	Coal alongside per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon
July 11 1923	$5.50@7.00	$1.76½	4.40@5.50c
Oct. 11	5.25@6.85	1.51½	4.00@4.50c
Jan. 9, 1924	5.25@6.50	1.41½	4.63@5.42c
April 8	4.50@6.50	1.66½	5.51c
July 21	4.50@6.25	1.81½	5.16@5.65c
Aug. 21	4.50@6.05	1.81½	4.91@5.16c
Sept. 22	4.65@6.05	1.81½	4.89@4.92c

At Philadelphia

	Coal trim. in bunk. per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon
July 9, 1923	$5.85@6.85	$1.62 @1.73	4.35@4.60c
Oct. 11	5.60@6.10	1.36½@1.51	4.12@4.36c
Jan. 9, 1924	5.50@6.30	1.415	3.86c
April 8	4.85@5.85	1.955	5 41@5.65c
July 21	4.85@6.00	1.945	5.40
Aug. 21	4.85@5.80	1.74½@1.81½	4.85@4.90
Sept. 22	4.85@5.80	1.792@1.815	5.00@5.10c

Other Ports

Boston coal, per ton . $6.91
Boston, oil, f. a. s., per barrel $1.44
Hampton Roads, coal, per ton f.o.b., 4.10@4.75
Cardiff, coal, per ton. 16s 6d
London, coal per ton 24s 0d
Antwerp, coal, per ton 23s 6d

Business News for the Marine Trade

Clyde Shipbuilding & Drydock Co., Ltd., 1561 Granville street, Vancouver, B. C., recently was incorporated with $10,000 capital stock.

Latin-American Fruit & Steamship Corp., has been chartered with $10,000,000 capital, to carry on transportation and steamship business, etc., by Frank I. Finkler, Walter H. Morgan and Fred E. T. Pearne, New York.

Herbert Stevedoring Corp., New York, has been incorporated for $5000 by H. J. Herbert, J. and A. Sorrentino, with P. A. Lauria, 1465 Broadway, as attorney.

Sorrentino Scaling Corp., New York has been formed with $5000 capital stock, to engage in business of ship cleaning, with P. A. Lauria, 1465 Broadway, as attorney, and J. and A. Sorrentino and H. J. Herbert as incorporators.

California & Eastern Steamship Co. has been formed with a Delaware charter, to own and operate boats, with $3,000,000 capitalization, by E. E. Craig, Dover, Del.

The Bethlehem Shipbuilding Corp., Ltd., will construct a 500-foot pile and concrete pier at a cost of over $2,000,000 adjoining its Simpson drydock plant at East Boston. It will act as mooring for the 480-foot floating drydock now at the Fore River shipyard of the Bethlehem Co.

The New England Maritime Co., Kittery, Me., has been incorporated with $300,000 capital to build, repair, charter and operate vessels. Elmer J. Burnham is president of the new company.

The Marine Ways Machine Co., Bayboro, Fla., contemplates improving its plant and enlarging its capacity. J. W. Appleby is president.

Nicholson-Universal Steamship Co., has been incorporated at Wilmington, Del., with $100,000 capital, by William Nicholson, 2654 Atwater street east, Detroit.

American Production Co. has been incorporated at Wilmington, Del., to manufacture and deal in ships, machinery and tools, with $5,000,000 capital stock, by J. P. Laffrey, Wilmington.

New York, Albany & Western Steamship Co. has been incorporated with offices in New York to act as ship broker, with $1,000,000 capital stock.

Captain C. S. Thomson's Motor Boat Tours, Alexandria Bay, N. Y., have been incorporated for $15,000 to own and operate boats, by C. S. and E. and S. G. Thomson, of that city.

Steamer Sea Gate Co., New Hamburg, N. Y., has been incorporated for $5000 to carry on a shipping business by F. V. Drake, J. A. and W. J. Tregarthen, with Alexander & Ash, 79 Wall street, as attorneys.

Hamilton Marine Contracting Co., Brooklyn, N. Y., has been incorporated for $100,000 to do a general marine business, by M. F. Vallone, T. S. Rinaldi and J. B. Anderson, with M. J. Esposito, 291 Broadway, as attorney.

Virginia Stevedoring Corp., New York, has been incorporated with 100 shares no par value common stock, to do a general marine contracting business, by A. J. Shea, M. H. Ravel and A. L. Marrilley, 20 Nassau street, that city, attorney.

Bath Iron Works, Bath, Me., has been awarded contract for constructing a steamer for the New Bedford, Martha's Vineyard & Nantucket Steamship Co.

A drydock is to be constructed at Porto Rico, by F. D. Retach to accommodate vessels of 20,000 tons. The construction is to cost approximately $5,000,000.

Business Changes

Otis Cutting, manager of the Lake Union Dry Dock Co., has purchased the Seattle Shipbuilding & Dry Dock Co., Seattle. The latter plant is being dismantled for use at the Lake Union location.

* * *

A. L. Becker, has taken over the manufacturer's agency of Ford & Gerrine, in San Francisco, for marine equipment. C. V. Lane and H. E. May, formerly of Ford & Gerrine, will be associated with Mr. Becker in the new organization.

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Enterprise Engine Co., San Francisco, and Western Machinery Co., Los Angeles, have merged. Both are builders of internal combustion engines and are engineers and manufacturers of complete power requirements.

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American Pioneer Line has been organized to take over the consolidated shipping board service formerly operated by Barber and Tampa Inter-Ocean companies to the Far East. The operating company is the newly organized Atlantic, Gulf & Far East Steamship Co. Oakley Wood is president of the American line, Philip Shore, vice president, George Murphy, secretary and Charles Barthold, treasurer.

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Wallace & Co., Portland, Oreg., ship brokers, have opened offices in the L. C. Smith building, Seattle, in charge of A. R. Johnson.

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The Province Line, operating the steamer Yankton in the passenger and freight service between Boston, Halifax and St. Johns, has moved its offices from Commercial wharf, to 26 and 27 T wharf, Boston.

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The Ware Shipping Co., 113 State street, Boston, has been made passenger agent for the Munson Steamship Line, to Nassau and South America.

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Steamship Theodore F. Reynolds Corp., New York, operator of vessels, etc., has been dissolved.

Herreshoff Mfg. Co., Bristol, Conn., will be auctioned off at voluntary liquidation sale due to lack of orders. The company is famous for building steam and sail craft, every defender of the America's cup having been constructed there since 1893.

Holland-American Trading Corp., New York, has been incorporated with $50,000 capital to carry on business of importing and exporting, by W. B. Walsh, F. W. Demuth and L. H. Buckler.

The shipping board has sold the WEST KATAN to undisclosed interests, probably the Weyerhaeuser Timber Co., San Francisco.

A pier costing approximately $50,000 will be constructed on the site of the old Ainsworth dock on the Williamette river, Portland, Oreg., by Union Pacific system and the McCormick Steamship Co.

Earles Shipbuilding & Engineering Co., Ltd., Hull, England, has been awarded an order for four steamers of about 2500 tons deadweight each, by the Eastern Steamship Co., Ltd., Port Colborne, Ont.

Construction is expected to begin about Jan. 1 on a new liner to be built by the American-Hawaiian Line for the San Francisco-Honolulu service of the Matson Navigation Co., Gibbs Bros., New York, naval architects, have been retained by the companies to complete the design and supervise construction which will be at the shipyards in Philadelphia of the William Cramp & Sons Ship & Engine Building Co.

Frank Rysdyk's Industrial Concerns, the largest shipbreaker in the Netherlands, recently sold its yard at Waspik, but the company will not liquidate its business as rumored there.

Columbia Pacific Shipping Co. has purchased the steel cargo steamer HANNAWA from the United States shipping board. The HANNAWA is 8500 tons gross, 440 feet long, 56 feet beam and 24.7 feet in depth.

General Petroleum Corp. will convert the steel tanker LIO into a motorship, Bethlehem Shipbuilding Corp. having been awarded the contract.

A. W. DeYoung will construct 10 rum chasers for the United States coast guard service at his Alameda, Cal., shipyard. Keels have been laid for five ships.

Standard Oil Co. has awarded the Chantiers et Ateliers de la Gironde, Bordeaux, France, contract for a cylindrical tanker motorship, 384 feet long, of 6500 tons deadweight.

The Longview Stevedoring Co., has been incorporated to handle the loading of vessels at the mills of the Long Bell Lumber Co., Longview, Wash. Capt. C. H. Johnson, for many years well known on the Columbia river, will be manager of the new company.